16

NAD SERVICE MANUAL

7130

AM/FM RECEIVER

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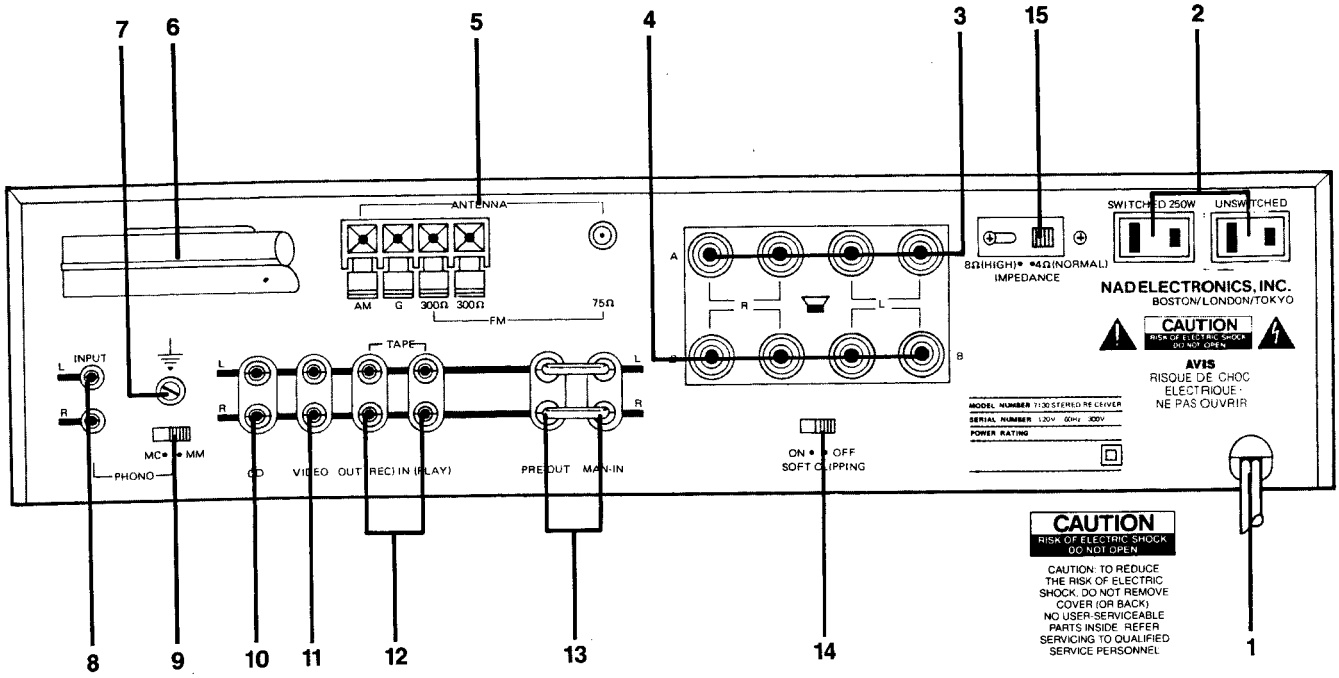
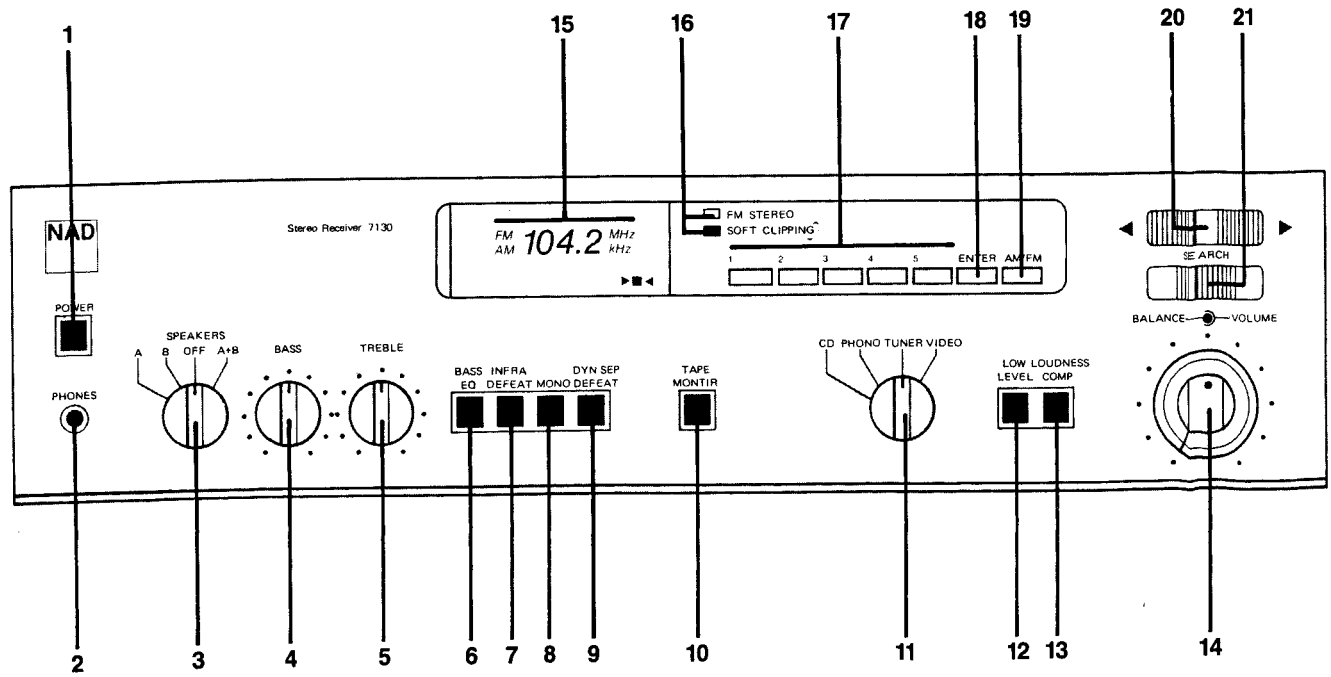
REAR PANEL

1. AC Line Cord.
2. AC Outlets.
3. Speakers A.
4. Speakers B.
5. Antenna Terminals.
6. AM Rod Antenna.
7. Phono Ground.
8. Phono Input.
9. MM/MC Selector.
10. CD Input.
11. Video Input.
12. Tape Rec/Play.
13. Preamp Out, Main In.
14. Soft Clipping.
15. Speaker Impedance.


ANTENNA
AM G 300Ω 300Ω
FM 75Ω
TAPE
INPUT
PHONO
MC MM
CD VIDEO OUT REC IN (PLAY)
PRE OUT MAIN IN
ON OFF
SOFT CLIPPING
SWITCHED 250W UNSWITCHED
8Ω(HIGH) 4Ω(NORMAL)
IMPEDANCE
NAD ELECTRONICS, INC.
BOSTON/LONDON/TOKYO
CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
AVIS
RISQUE DE CHOC ELECTRIQUE · NE PAS OUVRIR
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

FRONT PANEL

1. Power.
2. Phones.
3. Speaker Selector.
4. Bass.
5. Treble.
6. Bass EQ.
7. Infrasonic Filter Defeat.
8. Mono.
9. Dyn Sep Defeat.
10. Tape Monitor.
11. Input Selector.
12. Low Level.
13. Loudness Compensation.
14. Volume/Balance.
15. Tuning Display.
16. Status Indicators.
17. Tuning Pre-sets.
18. Memory Enter.
19. AM/FM.
20. Up/Down Tuning.
21. Search Mode (FM only).



Specifications, NAD 7130 Stereo Receiver

Note: Measurements references to 8 ohms are taken with the Speaker Impedance selector set to "8Ω (High)." Measurements for 4 and 2 ohms are taken with the impedance selector at "4Ω (Normal)." Specifications are measured in accordance with EIA Standard RS-490 (IF A-202) for amplifiers and ANSI-IEEE Standard 185 (1975) (IHF T-200) for tuners. Tuner sensitivity is measured via 75-ohm coaxial input and converted to equivalent 300-ohm values.

Power Amplifier Section, Stereo Mode

CONTINUOUS AVERAGE POWER OUTPUT INTO 8 OHMS (min. RMS power per channel into 8 ohms, 20Hz–20kHz. both channels driven, with no more than the rated distortion)		30 W
Rated distortion (THD), 20Hz–20kHz		0.03%
Clipping power (max. continuous power per channel)	8 ohms	45 W
	4 ohms	48 W
IF dynamic headroom at 8 ohms		+3 dB
IFH dynamic power (max. short-term power per channel)	8 ohms	60 W
	4 ohms	65 W
	2 ohms	85 W
Slew factor		>50
Slew rate		15 V/usec
Damping factor (ref. 8Ω at 50Hz)		>50
Input Impedance		22 KΩ
Input sensitivity for TW/40W out		.15/.84 V
Power amp gain		25 dB
THD (Total Harmonic Distortion, 20Hz–20kHz, from 250mW to rated output)		<0.03%
SMPTE I.M. (Intermodulation Distortion, 60Hz 1.7kHz, 4:1, from 250mW to rated output)		<0.03%
IHF I.M. (CCIF IM Distortion, (9+20kHz at rated output)		<0.03%

Bridged (Monophonic) Mode

CONTINUOUS AVERAGE POWER OUTPUT INTO 8 OHMS (min. RMS power into 8 ohms. 20Hz–20kHz, with no more than the rated distortion)	
IHF Dynamic Headroom at 8 ohms	
Dynamic power (max. short-term output, 8 ohms)	

Preamplifier Section,

Phono Input		
Input Impedance (MM or MC)		R=47KΩ, C=100pF
Input sensitivity (1 kHz)	MM:	0.45mV for 1W out 2.5mV for 30W out
	MC:	0.04mV for 1W out 0.25mV for 30W out
Input overload at 20Hz/1kHz/20kHz	MM:	18mV/170mV/1.5V
	MC:	1.8mV/18mV/170mV
THD (20Hz–20kHz) and IM Dist. at +30 dB level		0.04%
RIAA response accuracy		0.5 dB
S/N ratio, IHF A-weighted, with cartridge connected	MM:	76 dB re 5 mV
	MC:	76 dB re 0.5mV

Line Level Inputs (Aux, Tape)

Input Impedance	R=15KΩ; C=100pF
Input sensitivity	26 mV for 1W out 145mV for 30W out
Maximum input signal	>10V
Signal to noise ratio, A-weighted	85 dB re 1W 100 dB re 30W
Frequency response, 20Hz–20kHz	±0.5 dB

Outputs

Preamp output Impedance	800 ohms
Maximum output level	8 V
Tape output impedance	1000 ohms
Tape output infrasonic fillter	3 dB at 13 Hz. 12 dB/octave

Controls

Treble		±7 dB at 10KHz
Bess		±7 dB at 100 Hz
Speaker Equalization		+3 dB at 60 Hz +6 dB at 30 Hz
Infrasonic filter (switchable)		-3 dB at 15 Hz 12 dB/octave
Audio muting (low level)		-20 dB
FM Tuner Section		
Input Sensitivity		
	Mono, –30 dB THD +N	10.3 dBf (1.8μV/300Ω)
	Mono, 50 dB S/N	14.2 dBf (2.8 μV)
	Stereo, 50 dB S/N	34.2 dBf (28 μV)
	Stereo, 60 dB S/N	44.3 dBf (90 μV)
Capture ratio at 25, 45 and 65 dBf		<1.5 dB
AM rejection		>62 dB
Selectivity	Altarnate channel	70 dB
	Adjecent channel	6dB
Image rejection		75 dB
R.F. Intermodulation		65 dB
I.F. rejection		75 dB
SCA rejection		70 dB
Subcarrier suppression (19+38 kHz)		60 dB
THD at 100% modulation		1 KHz 100Hz-6KHz
	Mono	0.09% 0.2%
	Stereo	0.09% 0.3%
Signal-to-noise ratio A-weighted, 65 dBf	Mono	82 dB
	Stereo	75 dB (typ. 80 dB at 75 dBf)
Frequency response, 30–15 kHz		±0.5 dB
Stereo separation	1 kHz	50 dB
(Dyn Sep off)	30Hz–10kHz	40 dB

AM Tuner Section

Usable sensitivity	300 μV/meter
Selectivity	35 dB
Image rejection	50 dB
I.F. rejection	50 dB

Physical Specifications

Dimensions (width x height x depth)	42 x 10.8 x 38 cm. 16.5 x 4.25 x 15 in.
Net Weight	8 Kg/17 lb 9 oz.
Shipping weight	9.4 Kg/20 lb, 13 oz.
Power consumption	50/60 Hz at 110, 120. 220 or 240V AC 150 W

ALIGNMENT METHOD

AUDIO SECTION 7130

IMPORTANT

Speaker Impedance switch should be in 8 ohm position while adjusting center voltage and idling current.

INITIAL ADJUSTMENT (No load connected)

A. CENTER VOLTAGE

1. Connect DC millivoltmeter to L channel output terminals.
2. Turn on and adjust to 0 V ± 30mV with VR401 (1KB). Connect DC millivoltmeter to R channel output terminals and adjust VR402 to 0 V ± 30mV.

B. IDLING CURRENT

1. Remove solder short across R461 and R462.
2. Connect DC millivoltmeter across R461 (1Ω) (output transistor's collector resistor) and adjust RX1 for 26-30mV reading on meter.
   Repeat adjustment with RX2, connecting meter across R462 (1Ω).
3. Leave power on for minimum 5 minutes.

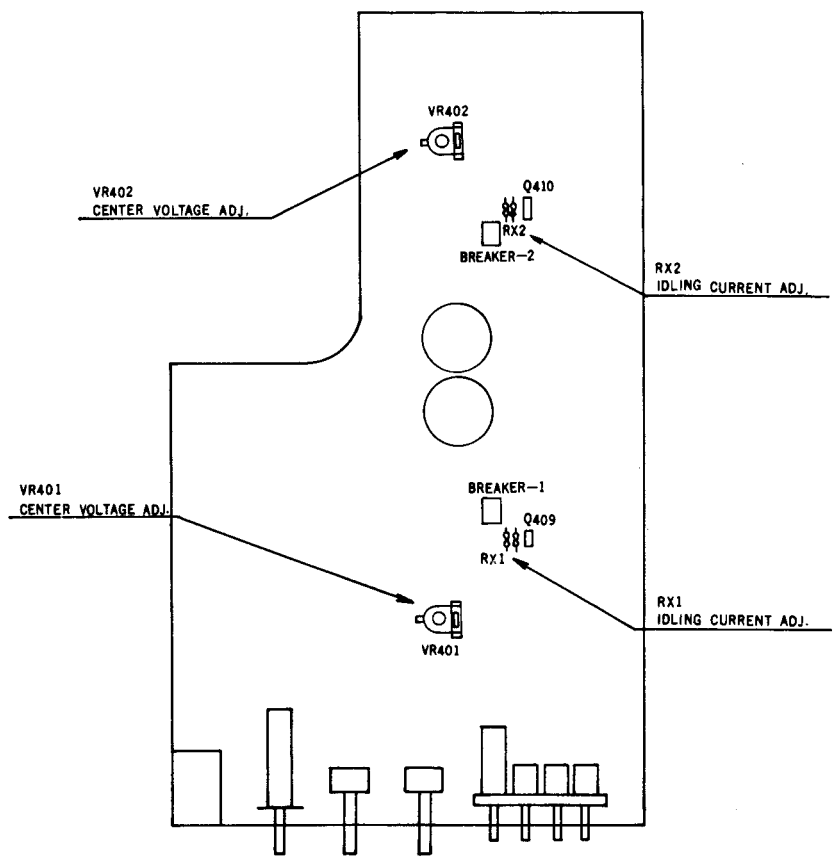
FINAL ADJUSTMENT

C. CENTER VOLTAGE

1. Repeat step A above.

D. IDLING CURRENT

1. Repeat step B and adjust with RX1, RX2 for 30mV reading on meter.
2. After the alignment is finished, 1Ω resistor R461, 462 is shorted by solder short.



AMPLIFIER ADJUSTMENT POINTS

FM ALIGNMENTS

NECESSARY INSTRUMENTATION

FM GENERATOR (less than 0.05% THD)
STEREO GENERATOR (less than 0.05% THD, more than 50 dB separation at 1 kHz.
AUDIO GENERATOR (not necessary if FM generator has built in sweep; i.e. SOUND TECHNOLOGY ST 1000A and ST 1020A)
2 AC VTVM's (or one with left/right channel switch)
THD ANALYZER (resolution better than 0.1%)
OSCILLOSCOPE (5mV or better sensitivity, X input capability)
FREQUENCY COUNTER
VOM or DMM (high impedance, must read in mV)
DIODE DETECTOR PROBE
COPPER / FERRITE INDUCTOR

IMPORTANT While all FM generator output levels hereafter are referred to the 300 ohm input, 75 ohm input can be used, but be aware of possible equipment groundloops and divide the RF output level by 2.
Before alignments commence set input selector to tuner and release tape, mono and dynsep defeat switches (out)

ALIGNMENT OF FRONTEND should only be necessary after repair to frontend or crystal oscillator circuits (pin 2 and 3 on IC7)

A TUNING VOLTAGE (OSCILLATOR)

It is essential to check tuning voltage before aligning the rest of the frontend.

1. Connect DMM between shield and pin 6 on frontend.
2. Tune to 108 MHz and adjust L 707 if voltage is incorrect.
   SPECIFICATION 20.5V ±0.5V
3. Tune to 87.5 MHz and read voltage, repeat step 2 and 3 if incorrect.
   SPECIFICATION 3V ± 0.5V

B. RF ADJUSTMENT (TRACKING)

1. Connect RF generator to antenna input and detectorprobe to pin 1, IC 2 (IF DETECTOR). with ground to detectorshield. Adjust sensitivity of oscilloscope to maximum (5mV or better) and modulate FM generator sweep ± 300 kHz or more WITH modulating (sweep) signal connected to X-input of oscilloscope.
2. Set tuner to 90 MHz, enter into preset 1, and tune generator so that curve appears on oscilloscope. Turn down RF input level so that curve covers approximately 1/2 of oscilloscope display.
3. Check alignments of L 702 – L 704 – L705 by inserting copper/ferrite inductor close to them while watching curve on oscilloscope. Curve should decrease in height with either ferrite (same as increasing inductance, i.e. more core) or with copper (same as decreasing inductance, i.e. extend size of coil). If curve increases in size more than 10%, adjust only the coil which reacts incorrectly. Adjust coils by gently extend or contract the aircoil with a non-metallic and non-static tool (i.e. plastic knit-pin or a wooden stick). Be careful not to deform coil.
4. Set tuner to 105MHz, enter into preset 2, and tune generator so that curve appears on oscilloscope.
5. Check L 702 – L 704 – L 705 again with the ferrite/copper inductor. Curve should not increase more than 10% on any of the coils.
6. Repeat step 2 + 3 + 4 + 5 if curve height is outside of telerances, if necessary distribute the error between 90 and 105 MHz. Check tuning voltage again if tolerances not possible to achieve.

C. IF ADJUSTMENT

1. Set tuner to approximately 98 MHz (the tuner must be tuned to an unoccupied frequency) enter into preset 3, and tune FM generator to display a curve on the oscilloscope.
2. Adjust L 709 (IFT tuner frontend) to maximum and symmetrical curve on the display, using as little input signal as possible.

D. DETECTOR COARSE ADJUSTMENT (OPTIONAL, NEEDED ONLY IF DETECTOR WAS REPAIRED).

1. Reduce sweep modulation level to +/– 75 kHz and set input level to 300 μV.
2. Adjust FM generator frequency so that both legs of the inverted U-shaped curve are equally high on the display. The curve should be almost perfectly symmetrical.
3. Disconnect detectorprobe from tuner and oscilloscope. Connect either of the tape rec. outputs to the oscilloscope.
4. Adjust IFT 1 primary (closest to the rear of unit) to maximum curveheight and IFT 1 secondary (closest to the front of unit) to minimum curveheight and straightest possible line. Go back and forth between primary and secondary till both are peaked.

NOTE: Both the cores should be within 1.5 mm from the top of the form.

E. DETECTOR ALIGNMENTS (FINAL)

1. Disconnect detectorprobe and connect tape rec. outputs to VTVM's, oscilloscope and distortion analyzer.
2. Switch stereo generator to 1 kHz 100% (+/– 75 kHz) mono modulation and oscilloscope to normal internal sweep 0.2 mS and 0.5 V/cm sensitivity.
3. Detector reference frequency
   Reduce FM generator output level while monitoring THD from left channel. When THD increases to 3%, fine tune the FM generator frequency to minimum THD. Reduce FM generator output level and fine tune till no reduction in the 3% THD can be achieved by fine tuning. Use this frequency for all the following detector, MPX and DYN SEP adjustments.

NOTE: The typical input level for this 3% THD should be 1.6 μV to 2.3 μV. This is done only to "lineup" the frequency from the generator to the tuner's frequency.
If IHF usable sensitivity (–30 dB THD+N = 3.16% THD+ N) is to be verified, a proper IHF bandpassfilter must be used.

4. Connect DMM across TP 2 (negative) and TP 1 (positive). Set FM generator output level to 1000 μV.
5. Adjust IFT 1 primary (closest to the rear of unit) for 0 V on DMM
   TOLERANCE +/– 50 mV
6. Adjust IFT 1 secondary (closest to the front of unit) for lowest THD
   SPECIFICATION less than 0.1%.
7. Repeat steps 3 – 5 and 6 till no further improvements. Record the DMM's final reading for use later in the adjustment.

F. AUTOSEARCH LEVEL

1. Connect DMM between IC 2 pin 12 and ground.
2. Increase FM generator level upwards from 0 and adjust VR 1 so that DMM reading goes from 0 V to approximately 4.8 V at 10 μV.
   TOLERANCE +/– 2 μV

G. STEREO DECODER, MPX FILTERS.

1. VCO
   Connect a frequency counter between IC 6 pin 11 and ground.
2. Set FM generator to 1000 μV output and no modulation.
3. Adjust VR 3 for a 19000 Hz reading on the counter.
   TOLERANCE +/– 100 Hz
4. Disconnect frequency counter and press DYN SEP defeat switch (in).
5. Stereo switch threshold.
   Modulate FM generator 1 kHz 45% left only plus 19 kHz pilot 8 – 10 %.
6. Increase FM generator level upwards from 0 and adjust VR 2 so that stereo light turns on and audio outputs as watched on VTVM and oscilloscope, switches to one channel only at 10 μV input level.
   TOLERANCE +5 μV

NOTE: When turning input level down the unit will switch into mono at a lower level, typically 5 – 7 μV.

7. Stereo separation
   Set FM generator output to 1000 μV, modulate in mono only.
8. Adjust VR 4 for identical outputs in the two channels.
   TOLERANCE +/– 20 mV.
9. Modulate FM generator left channel only and adjust VR 5 for minimum on right channel VTVM.
10. Modulate FM generator right channel only and adjust VR 5 for minimum on left channel VTVM.
11. If the minimum in step 9 and 10 are different, adjust VR 5 so that the readings are the same in both channels.
    SPECIFICATION better than 40 dB separation.
12. MPX filter
    Turn off audiomodulation, leaving pilot tone only. Disable IHF filter or external 19 kHz filter if used.
13. Adjust LPF 1 left channel and LPF 2 right channel for minimum output.
    SPECIFICATION more than 60 dB suppression.
14. Release the DYN SEP DEFEAT switch (out).

H DYN SEP ADJUSTMENTS.

1. Turn VR 6 – VR 7 and VR 8 fully clockwise.
2. DYN SEP separation effect.
   Observe output from left channel with FM generator output level 1000 μV and mdoulated 1 kHz left channel only.
   Reduce audiomodulation only from stereo generator so that left channel output is reduced by 6 dB (50% stereo modulation).
   The 19 kHz pilot signal MUST REMAIN modulated 8 – 10%.
3. Set FM generator output to 50 μV and adjust VR 7 for – 30 dB separation left to right channel.
   TOLERANCE +/– 2 dB
4. Switch modulation to right channel only while maintaining the same modulation level.
   Adjust VR 8 for – 30 dB separation right to left channel.
   TOLERANCE +/– 2 dB.
5. DYN SEP auto defeat level.
   Set generator output to 200 μV and adjust VR 6 so that separation starts increasing when watching left channel VTVM. Adjust FM generator output up and down around 200 μV and make sure switching occurs around 200 μV.
   TOLERANCE + 100 / – 30 μV.

I SYNTHESIZER FREQUENCY.

1. Tune to a known accurate frequency source, i.e. broadcasting station or synthesized / digital display FM generator, preferably in the midband (95 – 100 MHz).
2. Connect DMM acros TP 2 (negative) and TP 1 (positive).
3. Adjust VC 2 so that DMM reads the same as recorded in E – 7.
   TOLERANCE +/– 10 mV.

AM ALIGNMENTS

Unless repairs have been done to Oscillator Section, do not not adjust AM OSC coil or Trimming Capacitor.
If OSC Adjustment is needed, connect high impedance voltmeter (preferably DMM) between R35 and ground.

A. OSC ADJUSTMENT

1. Tune unit to show 1610KHz or 1602KHz on display and adjust VC3 to read 7.5V on DMM.
2. Tune unit to show 520KHz or 522KHz on display and adjust L3 to reads 1V ±0.5V on DMM.
3. Repeat step 1 and 2 until no further improvement.

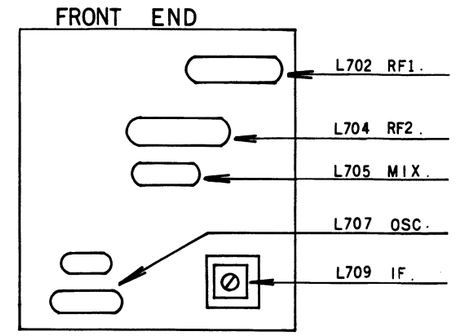
B IF ADJUSTMENT

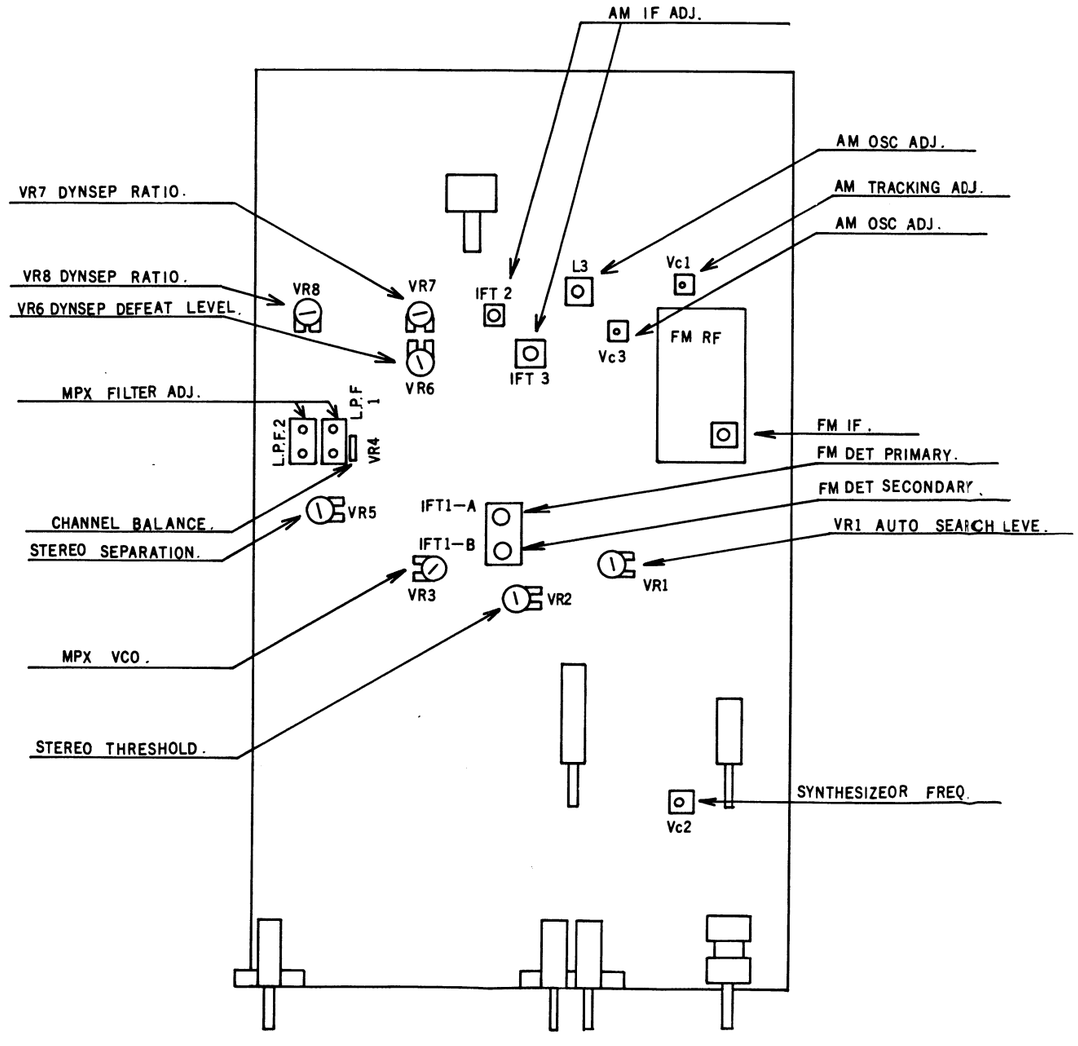
1. For IF adjustment and Tracking adjustment connect VTVM to loudspeaker output (or tape output), only one channel connection needed, and connect signal generator to antenna terminals. Adjust generator for 30% modulation and approx. 100μV input.
   Tune both generator and receiver to approx. 1000KHz, and adjust generator frequency for maximum reading on VTVM. Then adjust IFT2, and IFT3 for maximum reading on meter.

C. TRACKING ADJUSTMENT

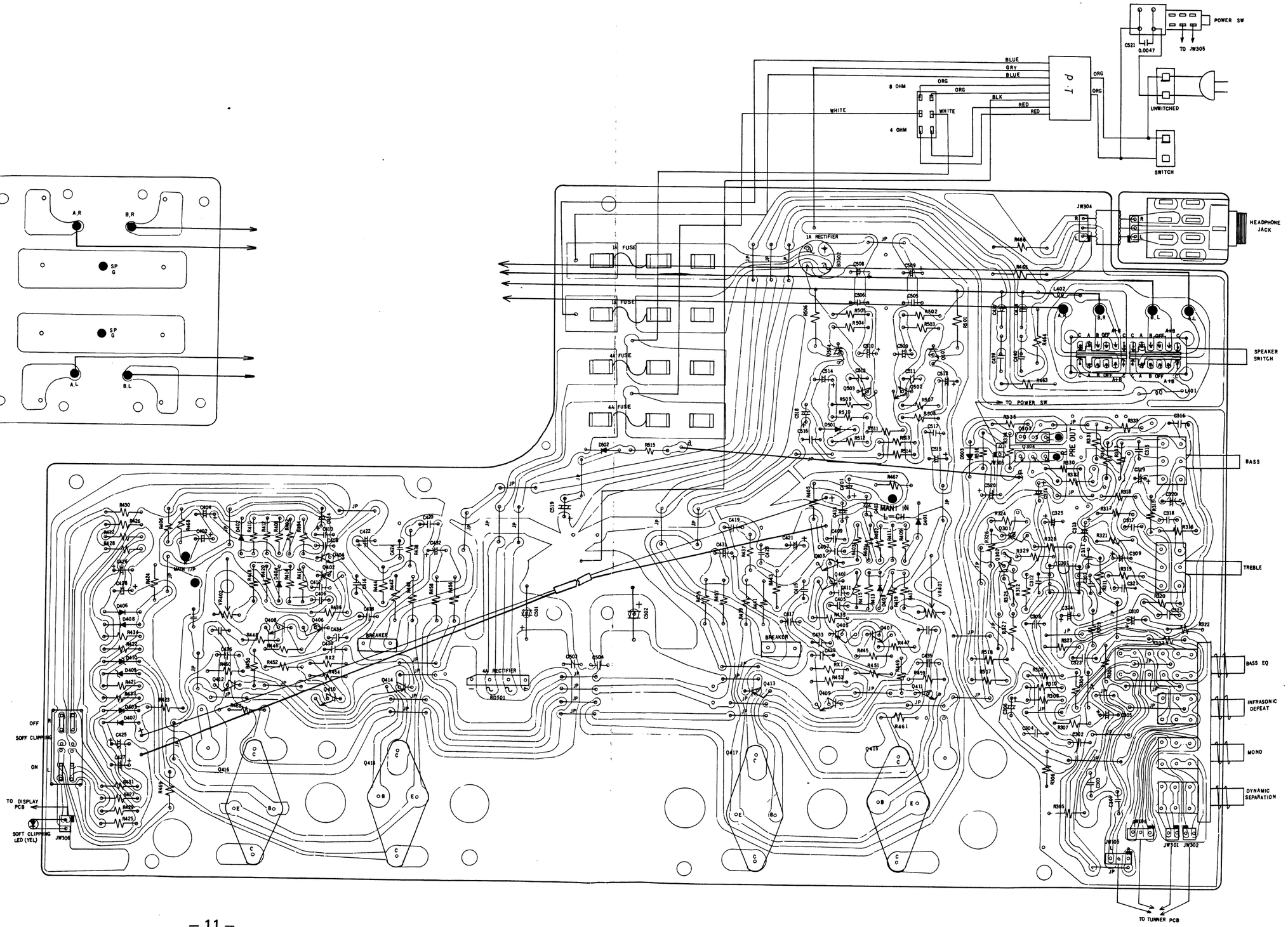
1. Tune unit and generator to show approx. 600KHz and adjust L2 to maximum reading on VTVM.
2. Tune unit and generator to show approx. 1400KHz and adjust VC1 (Trimming Capacitor) for maximum reading on VTVM.
3. Repeat step 1 and 2 until no further improvement.

TUNER ADJUSTMENT POINTS

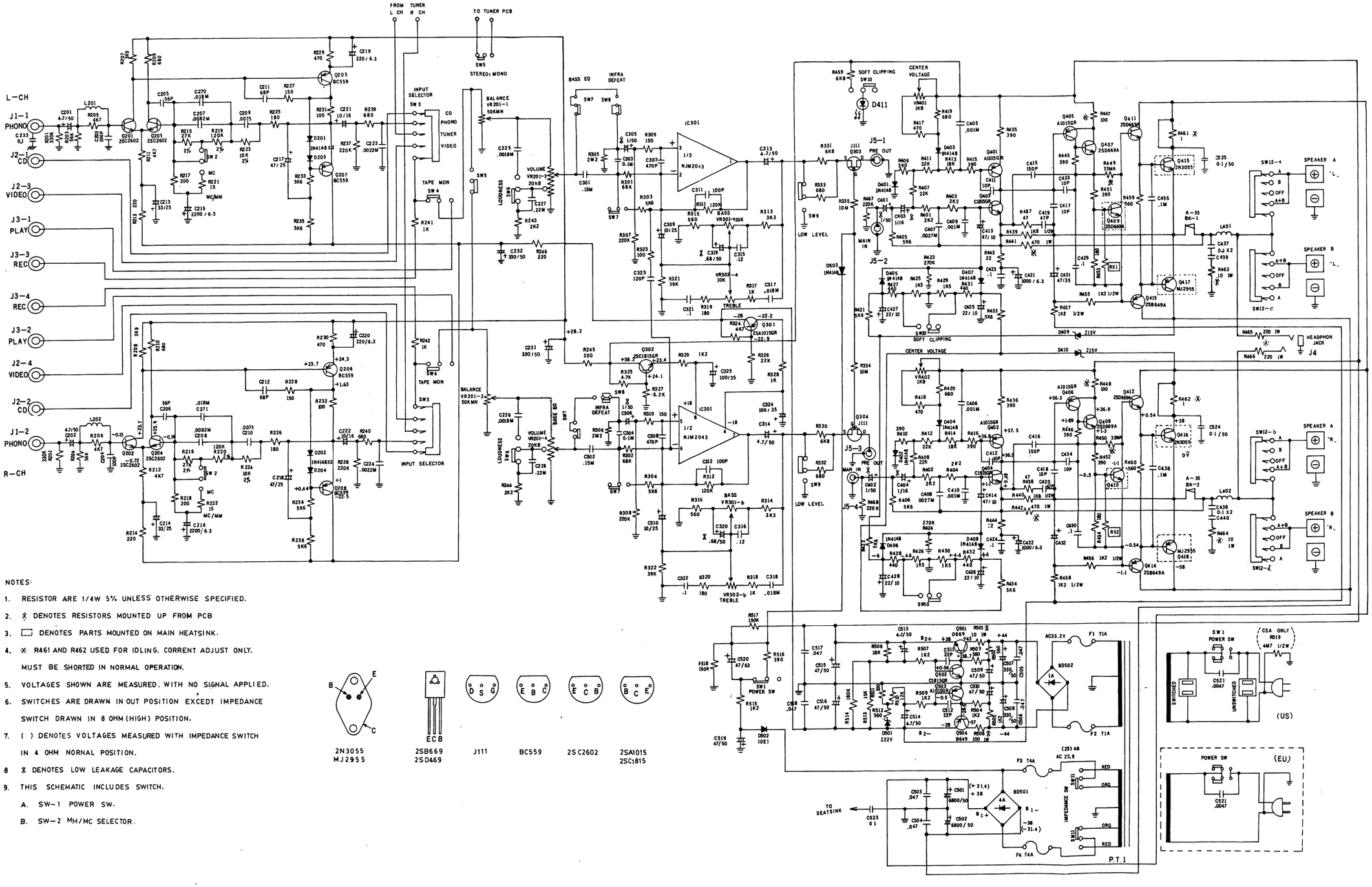




AMPLIFIER PCB LAYOUT AND WIRING DIAGRAM



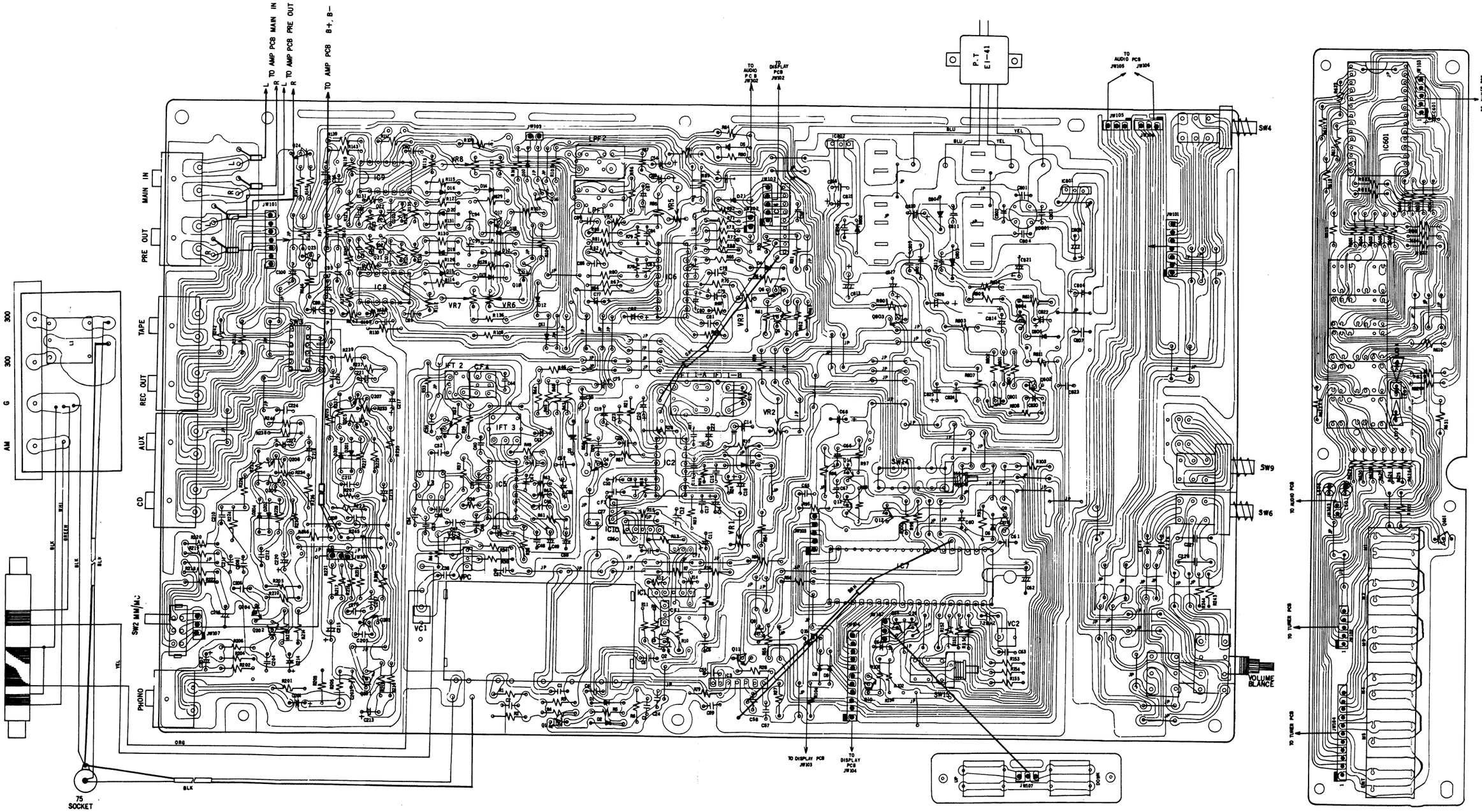
SCHEMATIC DIAGRAM
NAD7130
AMPLIFIER



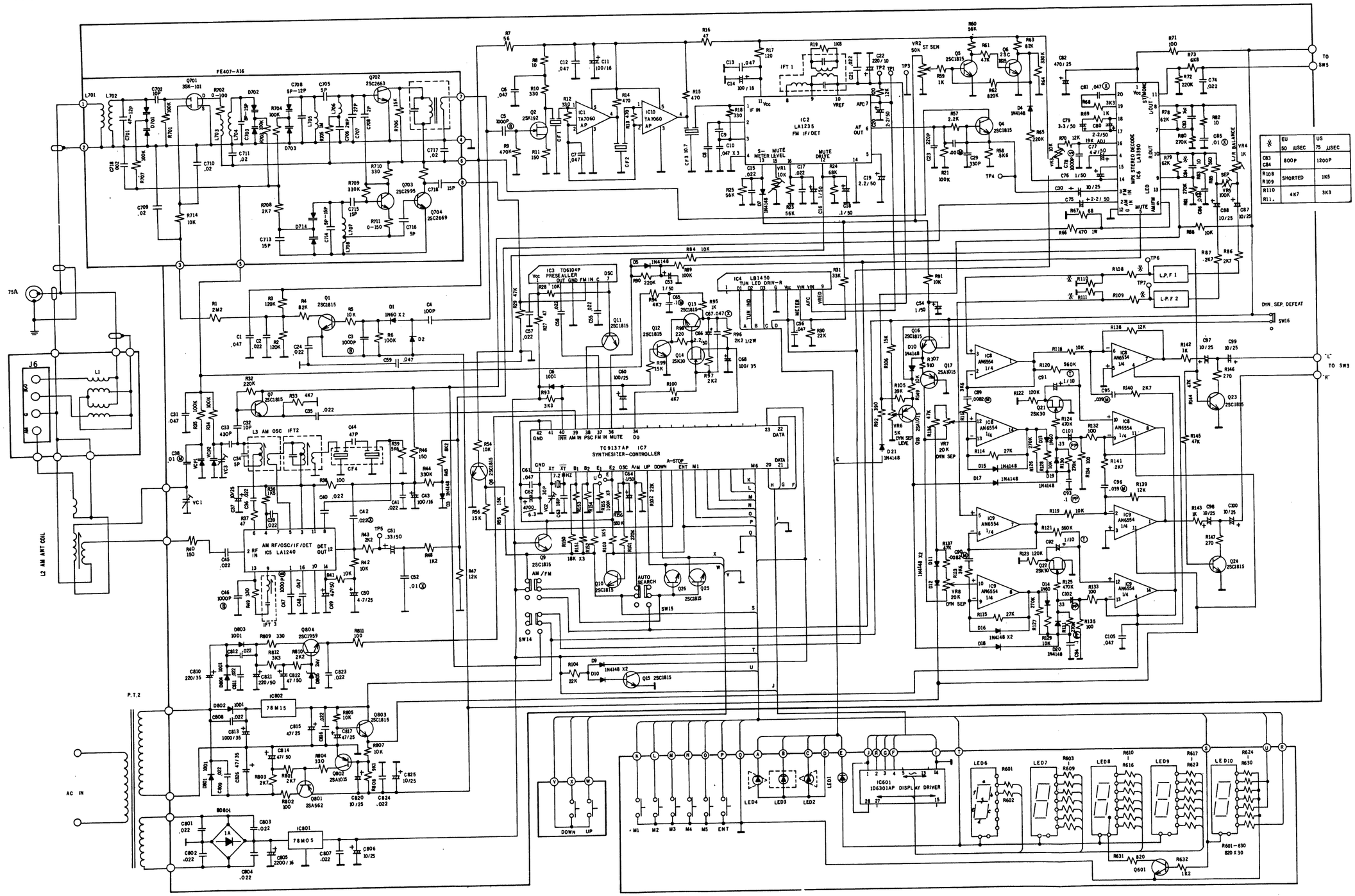
NOTES:

1. RESISTOR ARE 1/4W 5% UNLESS OTHERWISE SPECIFIED.
2. ※ DENOTES RESISTORS MOUNTED UP FROM PCB
3. ⬚ DENOTES PARTS MOUNTED ON MAIN HEATSINK.
4. ※ R461 AND R462 USED FOR IDLING. CORRENT ADJUST ONLY. MUST BE SHORTED IN NORMAL OPERATION.
5. VOLTAGES SHOWN ARE MEASURED. WITH NO SIGNAL APPLIED.
6. SWITCHES ARE DRAWN IN OUT POSITION EXCEDT IMPEDANCE SWITCH DRAWN IN 8 OHM (HIGH) POSITION.
7. ( ) DENOTES VOLTAGES MEASURED WITH IMPEDANCE SWITCH IN 4 OHM NORNAL POSITION.
8. ※ DENOTES LOW LEAKAGE CAPACITORS.
9. THIS SCHEMATIC INCLUDES SWITCH.
   A. SW-1 POWER SW.
   B. SW-2 MM/MC SELECTOR.

TUNER PCB LAYOUT AND WIRING DIAGRAM



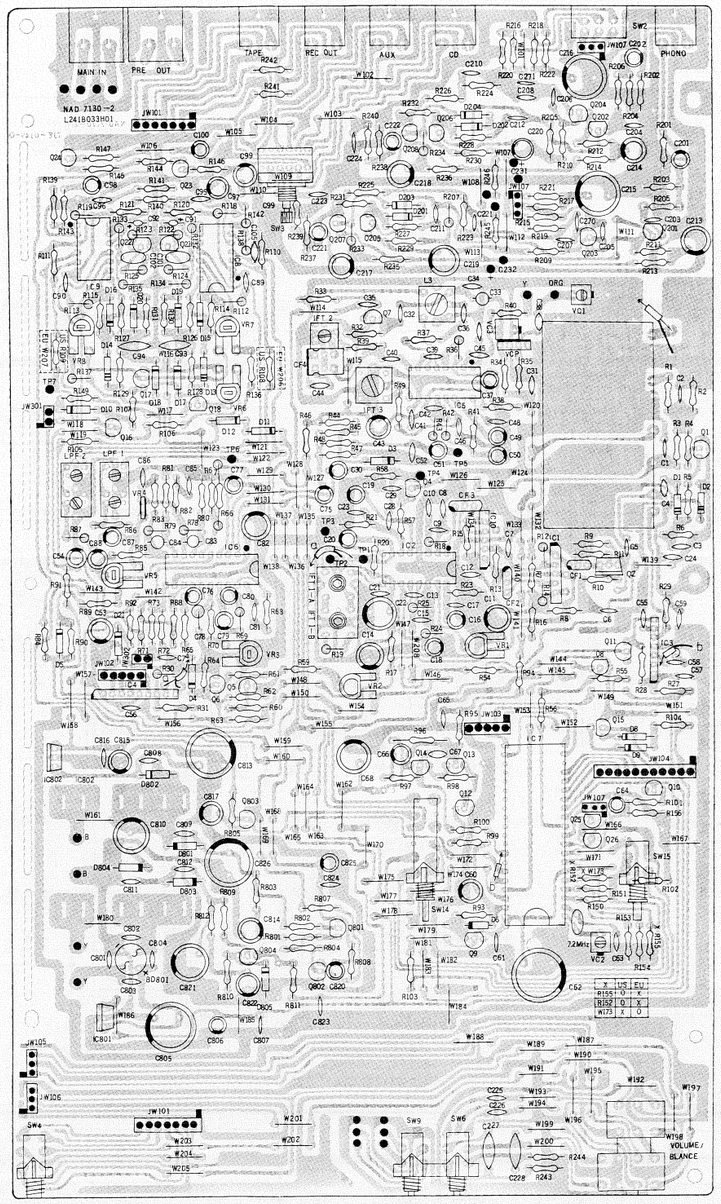
SCHEMATIC DIAGRAM
NAD7130
TUNER



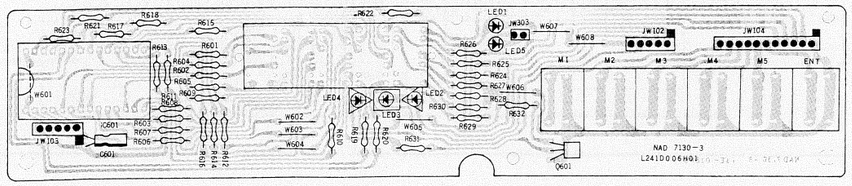
	EU 50 μSEC	US 75 μSEC
C83	800P	1200P
C84		
R108	SHORTED	1K5
R109		
R110	4K7	3K3
R111		

AMPLIFIER, TUNER, DISPLAY PCB COMPONENT LOCATION

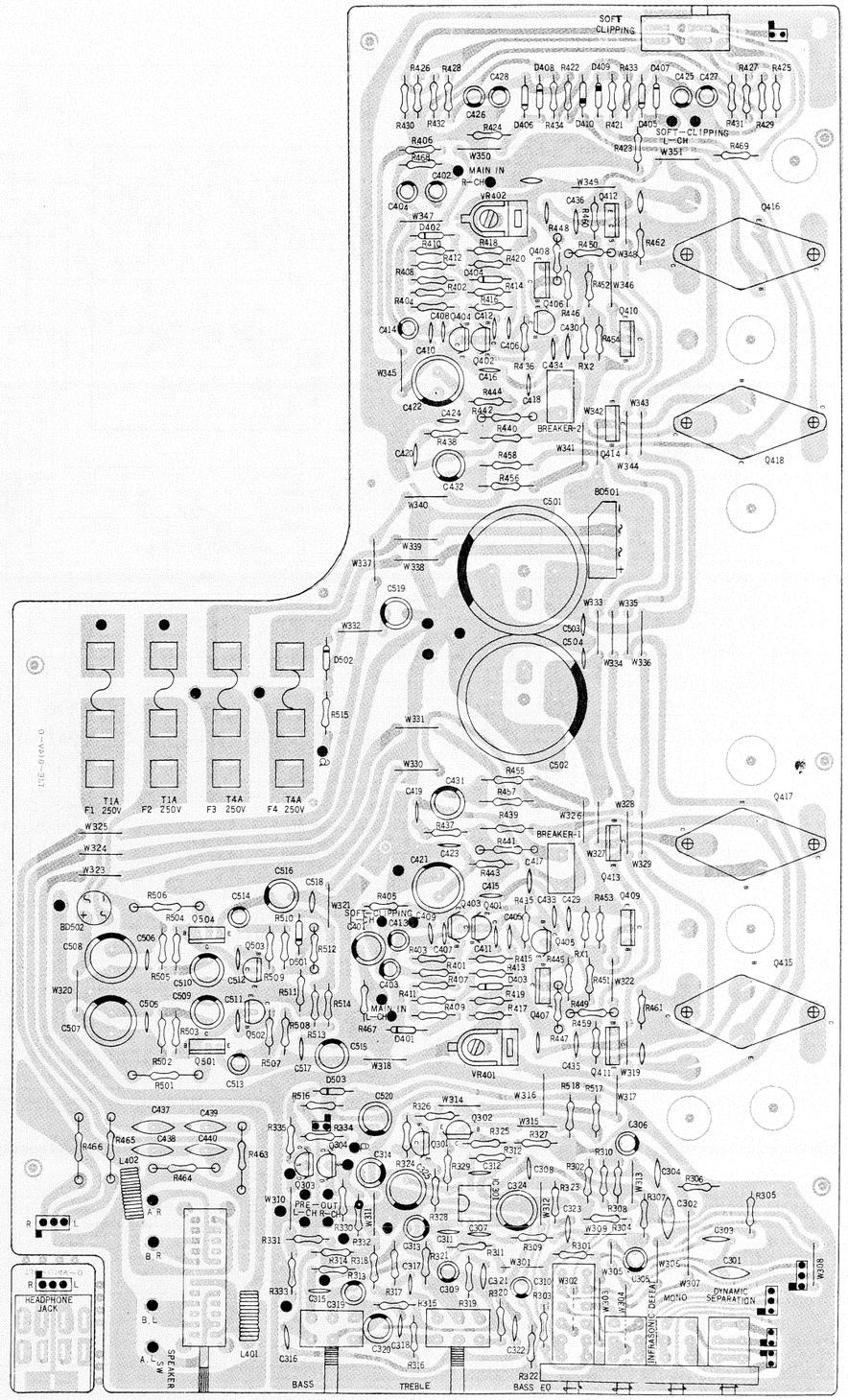
TUNER PCB



DISPLAY PCB



AMPLIFIER PCB



7130 PARTS LIST

SYMBOL NO.	PART NO.	DESCRIPTION				REF
R1	L103Y214H57	Res, Carb.	2.2M	±5%	1/4W	
R2	L103Y214H44	"	120K	"	"	
R3	L103Y214H44	"	120K	"	"	
R4	L103Y214H42	"	82K	"	"	
R6	L103Y214H31	"	10K	"	"	
R6	L103Y214H43	"	100K	"	"	
R7	L103Y214H69	"	56	"	"	
R8	L103Y214H01	"	10	"	"	
R9	L103Y214H51	"	470K	"	"	
R10	L103Y214H13	"	470K	"	"	
R11	L103Y214H09	"	150	"	"	
R12	L103Y317H13	"	330	"	"	
R13	L103Y214H15	"	470	"	"	
R14	L103Y317H15	"	470	"	"	
R15	L103Y214H15	"	470	"	"	
R16	L103Y214H05	"	47	"	"	
R17	L103Y214H08	"	120	"	"	
R18	L103Y317H13	"	330	"	"	
R19	L103Y317H22	"	1.8K	"	"	
R20	L103Y214H32	"	12K	"	"	
R21	L103Y214H43	"	100	"	"	
R23	L103Y214H40	"	56K	"	"	
R24	L103Y317H41	"	68K	"	"	
R25	L103Y317H40	"	56K	"	"	
R27	L103Y214H05	"	47	"	"	
R28	L103Y214H31	"	10K	"	"	
R29	L103Y214H39	"	47K	"	"	
R30	L103Y317H37	"	22K	"	"	
R31	L103Y214H37	"	33K	"	"	
R32	L103Y214H47	"	220K	"	"	
R33	L103Y214H27	"	4.7K	"	"	
R34	L103Y214H43	"	100K	"	"	
R35	L103Y214H43	"	100K	"	"	
R36	L103Y317H21	"	1.5K	"	"	
R37	L103Y214H05	"	47	"	"	
R38	L103Y214H07	"	100	"	"	
R39	L103Y214H28	"	5.6K	"	"	
R40	L103Y214H09	"	150	"	"	
R41	L103Y214H31	"	10K	"	"	
R42	L103Y317H31	"	10K	"	"	
R43	U103S017H23	"	2.2K	"	"	
R44	L103Y214H49	"	330K	"	"	
R45	L103Y214H30	"	8.2K	"	"	
R46	L103Y214H09	"	150	"	"	
R47	L103Y214H32	"	12K	"	"	
R48	L103Y214H20	"	1.2K	"	"	
R49	L103Y214H13	"	330	"	"	
R53						
R54	L103Y214H31	"	10K	"	"	
R55	L103Y214H33	"	15K	"	"	
R56	L103Y214H33	"	15K	"	"	
R57	L103Y214H23	"	2.2K	"	"	
R58	L103Y214H28	"	5.6K	"	"	
R59	L103Y214H19	"	1K	"	"	
R60	L103Y214H40	"	56K	"	"	
R61	L103Y214H39	"	47K	"	"	
R62	L103Y214H54	"	820K	"	"	
R63	L103Y214H42	"	82K	"	"	
R64	L103Y214H49	"	330K	"	"	
R65	L103Y214H47	"	220K	"	"	
R66	U105S005H21	"	470	"	"	
R67	L103Y214H06	"	68	"	"	
R68	L103Y214H25	"	3.3K	"	"	

SYMBOL NO.	PART NO.	DESCRIPTION				REF
R69	L103Y317H19	"	1K	"	"	
R70	L103Y214H32	"	12K	"	"	
R71	L103Y214H07	"	100	"	"	
R72	L103Y214H47	"	220K	"	"	
R73	L103Y214H29	"	6.8K	"	"	
R78	U103S035H40	"	62K	"	"	
R79	U103S035H40	"	62K	"	"	
R80	L103Y214H48	"	270K	"	"	
R81	L103Y214H48	"	270K	"	"	
R82	L103Y214H01	"	10	"	"	
R83	L103Y214H01	"	10	"	"	
R84	L103Y214H31	"	10K	"	"	
R85	L103Y214H16	"	560	"	"	
R86	L103Y214H24	"	2.7K	"	"	
R87	L103Y317H24	"	2.7K	"	"	
R88	L103Y214H31	"	10K	"	"	
R89	L103Y214H43	"	100K	"	"	
R90	L103Y214H47	"	220K	"	"	
R91	L103Y214H31	"	10K	"	"	
R92	L103Y214H14	"	390	"	"	
R93	L103Y214H25	"	3.3K	"	"	
R94	L103Y214H27	"	4.7K	"	"	
R95	L103Y214H19	"	1K	"	"	
R96	U103S024H23	"	2.2K	"	1/2W	
R97	L103Y214H23	"	2.2K	"	1/4W	
R98	L103Y214H11	"	220	"	"	
R99	L103Y214H33	"	15K	"	"	
R100	L103Y214H27	"	4.7K	"	"	
R101	L103Y214H47	"	220K	"	"	
R102	L103Y214H35	"	22K	"	"	
R103	L103Y214H21	"	1.5K	"	"	
R104	L103Y214H35	"	22K	"	"	
R105	L103Y214H38	"	39K	"	"	
R106	L103Y214H33	"	15K	"	"	
R107	U103S035H18	"	910	"	"	
R108, 109	U103S014H21	"	1.5K	"	"	A1, A
R109, 108	U103S014H21	"	1.5K	"	"	C3
R110, R111	U103SO14H25	"	3.3K	"	"	A1, A
R110, R111	U103SO14H27	"	3.3K	"	"	B, C
R111	U103SO14H25	"	3.3K	"	"	C3
R111	U103SO14H27	"	3.3K	"	"	B1, C2
R112	U103SO35H25	"	3.6K	"	"	
R113	U103SO35H25	"	3.6K	"	"	
R114	L103Y214H36	"	27K	"	"	
R115	L103Y214H36	"	27K	"	"	
R118	U103SO17H31	"	10K	"	"	
R119	U103SO17H31	"	10K	"	"	
R120	L103Y214H52	"	560K	"	"	
R121	L103Y214H52	"	560K	"	"	
R122	U103SO17H44	"	120K	"	"	
R123	U103SO17H44	"	120K	"	"	
R124	L103Y317H51	"	470K	"	"	
R125	U103SO17H51	"	470K	"	"	
R126	L103Y214H48	"	270K	"	"	
R127	L103Y214H48	"	270K	"	"	
R128	L103Y214H31	"	10K	"	"	
R129	L103Y214H31	"	10K	"	"	
R130	L103Y214H48	"	270K	"	"	
R131	L103Y214H48	"	270K	"	"	
R132	L103Y317H07	"	100	"	"	
R133	L103Y317H07	"	100	"	"	
R134	L103Y317H07	"	100	"	"	
R135	U103SO17H07	"	100	"	"	
R136	L103Y214H39	"	47K	"	"	
R137	U103SO14H39	"	47K	"	"	

SYMBOL NO.	PART NO.	DESCRIPTION				REF
R138	L103Y317H32	"	12K	"	"	
R139	L103Y214H32	"	12K	"	"	
R140	L103Y214H24	"	2.7K	"	"	
R141	L103Y214H24	"	2.7K	"	"	
R142	U103SO17H19	"	1K	"	"	
R143	L103Y214H19	"	1K	"	"	
R144	L103Y214H27	"	4.7K	"	"	
R145	L103Y214H27	"	4.7K	"	"	
R146	L103Y214H12	"	270	"	"	
R147	L103Y214H12	"	270	"	"	
R149	L103Y214H31	"	10K	"	"	
R150	L103Y214H34	"	18K	"	"	
R151	L103Y214H34	"	18K	"	"	
R152	U103SO14H34	"	18K	"	"	A1, A, C3
R153	L103Y214H43	"	100K	"	"	
R154	L103Y214H43	"	100K	"	"	
R155	U103SO14H43	"	100K	"	"	A1, A, C3
R156	L103Y214H52	"	560K	"	"	
R201	L103Y214H49	"	330K	"	"	
R202	L103Y214H49	"	330K	"	"	
R203	L103Y214H40	"	56K	"	"	
R204	L103Y214H40	"	56K	"	"	
R205	U103SO14H27	"	4.7K	"	"	
R206	U103SO14H27	"	4.7K	"	"	
R207	L103Y317H26	"	3.9K	"	"	
R208	L103Y214H26	"	3.9K	"	"	
R209	L103Y214H17	"	680	"	"	
R210	L103Y214H17	"	680	"	"	
R211	L103Y214H27	"	4.7K	"	"	
R212	L103Y214H27	"	4.7K	"	"	
R213	L103Y214H11	"	220	"	"	
R214	L103Y214H11	"	220	"	"	
R215	L013Y216H59	"	27K	"	"	
R216	L103Y216H59	"	27K	"	"	
R217	U103SO35H10	"	200	"	"	
R218	U103SO35H10	"	200	"	"	
R219	L103Y216H75	"	120K	±2%	"	
R220	L103Y216H75	"	120K	"	"	
R221	L103Y214H02	"	15	±5%	"	
R222	L103Y214H02	"	15	"	"	
R223	L103Y216H49	"	10K	±2%	"	
R224	L103Y216H49	"	10K	"	"	
R225	L103Y214H10	"	180	"	"	
R226	L103Y214H10	"	180	"	"	
R227	L103Y214H09	"	150	±5%	"	
R228	L103Y214H09	"	150	"	"	
R229	L103Y214H15	"	470	"	"	
R230	L103Y214H15	"	470	"	"	
R231	L103Y214H07	"	100	"	"	
R232	L103Y214H07	"	100	"	"	
R233	L103Y317H28	"	5.6K	"	"	
R234	L103Y317H28	"	5.6K	"	"	
R235	L103Y214H28	"	5.6K	"	"	
R236	L103Y214H28	"	5.6K	"	"	
R237	L103Y214H47	"	220K	"	"	
R238	L103Y214H47	"	220K	"	"	
R239	L103Y214H17	"	680	"	"	
R240	L103Y214H17	"	680	"	"	
R241	L103Y214H19	"	1K	"	"	
R242	L103Y214H19	"	1K	"	"	
R243	L103Y214H23	"	2.2K	"	"	
R244	L103Y214H23	"	2.2K	"	"	
R245	L103Y214H13	"	330	"	"	
R246	L103Y214H11	"	220	"	"	
R601-R631	L103Y214H18	"	820	"	"	

SYMBOL NO.	PART NO.	DESCRIPTION				REF
R632	L103Y214H20	"	1.2K	"	"	
R801	L103Y214H24	"	2.7K	"	"	
R802	L103Y214H07	"	100	"	"	
R803	L103Y214H24	"	2.7K	"	"	
R804	L103Y214H13	"	330	"	"	
R805	L103Y214H31	"	10K	"	"	
R807	L103Y214H31	"	10K	"	"	
R808	U103SO35H30	"	9.1K	"	"	
R809	L103Y214H13	"	330	"	"	
R810	L103Y214H23	"	2.2K	"	"	
R811	L103Y214H07	"	100	"	"	
R812	L103Y214H25	"	3.3K	"	"	
RX1	L103D003H01	"	440	"	"	
RX2	L103D003H01	"	440	"	"	
RX1	L103D003H02	"	450	"	"	
RX2	L103D003H02	"	450	"	"	
RX1	L103D003H03	"	460	"	"	
RX2	L103D003H03	"	460	"	"	
RX1	U103S014H15	"	470	"	"	
RX2	U103S014H15	"	470	"	"	
RX1	L103D003H04	"	480	"	"	
RX2	L103D003H04	"	480	"	"	
RX1	L103D003H05	"	490	"	"	
RX2	L103D003H05	"	490	"	"	
RX1	L103D003H06	"	500	"	"	
RX2	L103D003H06	"	500	"	"	
RX1	U103S034H15	"	510	"	"	
RX2	U103S034H15	"	510	"	"	
RX1	L103D003H07	"	520	"	"	
RX2	L103D003H07	"	520	"	"	
RX1	L103D003H08	"	530	"	"	
RX2	L103D003H08	"	530	"	"	
RX1	L103D003H09	"	540	"	"	
RX2	L103D003H09	"	540	"	"	
R301	L103Y214H41	"	68K	"	"	
R302	L103Y214H41	"	68K	"	"	
R303	L103Y214H28	"	5.6K	"	"	
R304	L103Y214H28	"	5.6K	"	"	
R305	L103Y214H57	"	2.2M	"	"	
R306	L103Y214H57	"	2.2M	"	"	
R307	L103Y214H47	"	220K	"	"	
R308	L103Y214H47	"	220K	"	"	
R309	L103Y214H09	"	150	"	"	
R310	L103Y214H09	"	150	"	"	
R311	L103Y214H44	"	120K	"	"	
R312	L103Y214H44	"	120K	"	"	
R313	L103Y214H25	"	3.3K	"	"	
R314	L103Y214H25	"	3.3K	"	"	
R315	L103Y214H16	"	560	"	"	
R316	L103Y214H16	"	560	"	"	
R317	L103Y214H19	"	1K	"	"	
R318	L103Y214H19	"	1K	"	"	
R319	L103Y214H10	"	180	"	"	
R320	L103Y214H10	"	180	"	"	
R321	L103Y214H38	"	39K	"	"	
R322	L103Y214H38	"	39K	"	"	
R323	L103Y214H07	"	100	"	"	
R324	L103Y214H27	"	4.7K	"	"	
R325	L103Y214H27	"	4.7K	"	"	
R326	L103Y214H35	"	22K	"	"	
R327	L103Y214H30	"	8.2K	"	"	
R328	L103Y214H19	"	1K	"	"	
R329	L103Y214H20	"	1.2K	"	"	

SYMBOL NO.	PART NO.	DESCRIPTION	REF
R330	L103Y214H29	" 6.8K " "	
R331	L103Y214H29	" 6.8K " "	
R332	L103Y214H17	" 680 " "	
R333	L103Y214H17	" 680 " "	
R334	L103Y214H59	" 10M " "	
R335	L103Y214H59	" 10M " "	
R401	L103Y214H23	" 2.2K " "	
R402	L103Y214H23	" 2.2K " "	
R403	L103Y214H23	" 2.2K " "	
R404	L103Y214H23	" 2.2K " "	
R405	L103Y214H28	" 5.6K " "	
R406	L103Y214H28	" 5.6K " "	
R407	L103Y214H35	" 22K " "	
R408	L103Y214H35	" 22K " "	
R409	L103Y214H14	" 390 " "	
R410	L103Y214H14	" 390 " "	
R411	L103Y214H35	" 22K " "	
R412	L103Y214H35	" 22K " "	
R413	L103Y214H34	" 18K " "	
R414	L103Y214H34	" 18K " "	
R415	L103Y214H14	" 390 " "	
R416	L103Y214H14	" 390 " "	
R417	L103Y214H15	" 470 " "	
R418	L103Y214H15	" 470 " "	
R419	L103Y214H17	" 680 " "	
R420	L103Y214H17	" 680 " "	
R421	L103Y214H28	" 5.6K " "	
R422	L103Y214H28	" 5.6K " "	
R423	L103Y214H48	" 270K " "	
R424	L103Y214H48	" 270K " "	
R425	L103Y214H21	" 1.5K " "	
R426	L103Y214H21	" 1.5K " "	
R427	L103D003H01	" 440 " "	
R428	L103D003H01	" 440 " "	
R429	L103Y214H21	" 1.5K " "	
R430	L103Y214H21	" 1.5K " "	
R431	L103D003H01	" 440 " "	
R432	L103D003H01	" 440 " "	
R433	L103Y214H28	" 5.6K " "	
R434	L103Y214H28	" 5.6K " "	
R435	L103Y214H14	" 390 " "	
R436	L103Y214H14	" 390 " "	
R437	L103Y214H05	" 47 " "	
R438	L103Y214H05	" 47 " "	
R439	U103S024H22	" 1.8K " 1/2W	
R440	U103S024H22	" 1.8K " "	
R441	U105S005H21	" 470 " 1W	
R442	U105S005H21	" 470 " "	
R443	L103Y214H03	" 22 " "	
R444	L103Y214H03	" 22 " "	
R445	L103Y214H14	" 390 " "	
R446	L103Y214H14	" 390 " "	
R447	U103S014H07	" 100 " "	
R448	U103S014H07	" 100 " "	
R449	U105S023H07	" 33 " "	
R450	U105S023H07	" 330 " "	
R451	L103Y214H14	" 390 " "	
R452	L103Y214H14	" 390 " "	
R453	L103Y214H10	" 180 " "	
R454	L103Y214H10	" 180 " "	
R455	U103S024H20	" 1.2K " 1/2W	
R456	U103S024H20	" 1.2K " "	
R457	U103S024H20	" 1.2K " "	
R458	U103S024H20	" 1.2K " "	
R459	L103Y214H16	" 560 " 1/4W	

SYMBOL NO.	PART NO.	DESCRIPTION	REF
R460	L103Y214H16	" 560 " "	
R461	L103Y214H62	" 1 " "	
R462	L103Y214H62	" 1 " "	
R463	U105S005H01	" 10 " 1W	
R464	U105S005H01	" 10 " "	
R465	U105S005H17	" 220 " "	
R466	U105S005H17	" 220 " "	
R467	L103Y214H47	" 220K " 1/4W	
R468	L103Y214H47	" 220K " "	
R469	L103Y214H29	" 6.8K " "	
R501	U105S005H01	" 10 " 1W	
R502	L103Y214H16	" 560 " 1/4W	
R503	L103Y214H16	" 560 " "	
R504	L103Y214H20	" 1.2K " "	
R505	L103Y214H20	" 1.2K " "	
R506	U105S005H13	" 100 " 1W	
R507	L103Y214H20	" 1.2K " "	
R508	L103Y214H34	" 18K " "	
R509	L103Y214H20	" 1.2K " "	
R510	L103Y214H20	" 1.2K " "	
R511	L103Y214H07	" 100 " "	
R512	L103Y214H16	" 560 " "	
R513	L103Y214H33	" 15K " "	
R514	L103Y214H46	" 180K " "	
R515	L103Y214H20	" 1.2K " "	
R516	L103Y214H14	" 390 " "	
R517	L103Y214H45	" 150K " "	
R518	L103Y214H45	" 150K " "	
R519	L103Y023H17	" 4.7M " "	
C1	L140Y306H45	Cap, Cer, 0.047μF +80–20% 50W V	
C2	L140Y306H39	Cap, Cer, 0.022μF +80–20% 50W V	
C3	U140S005H03	" 0.001μF ±10% "	
C4	U150S008H36	" 100pF ±5% "	
C5	L140Y306H12	" 0.001μF ±10% "	
C6	L140Y306H45	" 0.047μF +80–20% "	
C7	U140S005H31	" 0.047μF " "	
C8	L140Y306H45	" 0.047μF " "	
C9	U140S005H31	" 0.047μF " "	
C10	L140Y306H45	" 0.047μF " "	
C11	U182S022H26	Cap, El, 100μF +50–10% 16V	
C12	U140S005H31	Cap, Cer, 0.047μF +80–20% 50W V	
C13	U140S005H31	" 0.047μF +80–20% 50W V	
C14	U182S022H26	Cap, El, 100μF +50–10% 16V	
C15	U140S005H29	Cap, Cer, 0.022μF +80–20% 50W V	
C16	L182Y322H60	Cap, El, 1μF +75–10% 50V	
C17	U140S005H29	Cap, Cer, 0.022μF +80–20% 50W V	
C18	U182S022H55	Cap, El, 0.1μF +75–10% 50V	
C19	U182S022H61	" 2.2μF +75–10% 50V	
C20	U182S022H61	" 2.2μF +75–10% 50V	
C21	L140Y306H39	Cap, Cer, 0.022μF +80–20% 50W V	
C22	U182S022H15	Cap, El, 220μF +50–10% 16V	
C23	U150S008H44	Cap, Cer, 220pF ±5% 50W V	
C24	L140Y201H21	" 0.047μF ±10% 50W V	
C26	L140Y306H39	Cap, Cer, 0.022μF +80–20% 50W V	
C27	L140S005H29	" 0.022μF +80–20% 50W V	
C28	L172Y306H01	Cap, Poly, 1000pF ±5% 50W V	
C29	U150S008H48	Cap, Cer, 330pF ±5% "	
C30	L182Y322H34	Cap, El, 10μF +50–10% 25V	
C31	L140Y306H45	Cap, Cer, 0.047μF +80–20% 50W V	
C32	L140Y203H11	" 10pF ±5% 50W V	
C33	U173S006H16	Cap, Cer, 430PF " "	
C34	L140Y203H06	" 5pF ±0.25 50W V	
C35	L140Y306H39	" 0.022μF +80–20% 50W V	
C36	L140Y201H17	" 0.022μF ±10% 50W V	

SYMBOL NO.	PART NO.	DESCRIPTION				REF
C37	L182Y322H34	Cap, El,	10μF	+50–10%	25V	
C38	L172Y306H13	Cap, Cer,	0.01μF	±5%	50WV	
C39	L140Y306H39	"	0.022μF	+80–20%	50WV	
C40	L140Y306H39	"	0.022μF	+80–20%	50WV	
C41	L140Y306H39	Cap, Cer,	0.022μF	+80–20%	50WV	
C42	L140Y201H17	"	0.022μF	±10%	25V	
C43	L182Y322H26	Cap, El,	100μF	+50–10%	16V	
C44	L140Y203H27	Cap, Cer,	47μF	±5%	50WV	
C45	U140S005H29	"	0.022μF	+80–20%	50WV	
C46	L140Y306H12	"	0.001μF	±10%	50WV	
C47	L140Y306H12	"	0.001μF	"	"	
C48	U140S005H31	"	0.047μF	+80–20%	50WV	
C49	U182S022H63	Cap, El,	4.7μF	+75–10%	50V	
C50	U182S022H63	"	4.7μF	+75–10%	50V	
C51	U182S022H57	"	0.33μF	+75–10%	50V	
C52	L140Y201H13	Cap, Cer,	0.01μF	±10%	25WV	
C53	L182Y322H60	Cap, El,	1μF	+75–10%	50V	
C54	U182S022H60	"	1μF	+75–10%	50V	
C55	L140Y306H39	Cap, Cer,	0.022μF	+80–20%	50WV	
C56	L140Y306H45	"	0.047μF	+80–20%	"	
C57	U140S005H29	"	0.022μF	+80–20%	"	
C58	L140Y306H39	"	0.022μF	+80–20%	"	
C59	L140Y306H45	"	0.047μF	+80–20%	"	
C60	U182S022H38	Cap, El,	100μF	+50–10%	25V	
C61	L140Y306H45	Cap, Cer,	0.047μF	+80–20%	50WV	
C62	L180Y037H01	Cap, El,	4700μF	+50–10%	6.3V	
C63	L140Y203H17	Cap, Cer,	18pF	±5%	50WV	
C64	L182Y322H55	Cap, El,	0.1μF	+75–10%	50V	
C65	U172S002H13	Cap, Cer.	0.1μF	±5%	50WV	
C66	L182Y322H61	Cap, El,	2.2μF	+75–10%	50V	
C67	L140Y201H21	Cap, Cer,	0.047μF	±10%	50WV	
C68	U182S022H49	Cap, El,	100μF	+50–10%	35V	
C74	L140Y306H39	Cap, Cer,	0.022μF	+80–20%	50WV	
C75	U182S022H61	Cap, El,	2.2μF	+75–10%	50V	
C76	U182S022H60	"	1μF	+75–10%	50V	
C77	U182S022H63	"	4.7μF	+75–10%	50V	
C78	U173S004H09	Cap, Cer,	10000pF	±5%	50WV	
C79	U182S022H62	Cap, El,	3.3μF	+75–10%	50V	
C80	U182S022H61	Cap, El,	2.2μF	+75–10%	50V	
C81	L140Y201H21	Cap, Cer,	0.047μF	±10%	25V	
C82	U182S022H41	Cap, El,	470μF	+50–10%	25V	
C83, C84	U173S004H18	Cap, Poly,	1200pF	±5%	50WV	A, C3, A1
C83, C84	L173D001H03	"	800pF	"	"	B, C
C85	L140Y201H13	Cap, Cer.	0.01μF	±10%	25V	B1, C2
C86	L140Y201H13	"	0.01μF	"	"	
C87	U182S022H34	Cap, El,	10μF	+50–10%	25V	
C88	U182S022H34	"	10μF	"	"	
C89	L172Y306H12	Cap, Cer,	0.0082μF	±5%	50WV	
C90	L172Y306H12	"	0.0082μF	"	"	
C91	L184Y001H26	Cap, El,	1μF	±20%	25V	
C92	L184Y001H26	"	1μF	"	25V	
C93	L172Y003H01	Cap, Cer,	0.1μF	±910%	50WV	
C94	L172Y003H01	"	0.1μF	"	"	
C95	U172S002H70	Cap, Poly,	0.039μF	±5%	50WV	
C96	U172S002H70	"	0.039μF	"	"	
C97	U182S022H34	Cap, El,	10μF	+50–10%	25V	
C98	U182S022H34	"	10μF	+50–10%	25V	
C99	U182S022H34	"	10μF	+50–10%	25V	
C100	U182S022H34	"	10μF	+50–10%	25V	
C101	L172Y002H01	Cap, Cer,	0.33μF	±10%	50WV	
C102	L172Y002H01	"	0.33μF	"	"	
C105	U140S005H31	Cap, Cer,	0.047μF	+80–20%	50WV	
C201	L182Y322H63	Cap, El,	4.7μF	+75–10%	50V	
C202	L182Y322H63	"	4.7μF	+75–10%	50V	
C203	L140Y203H35	Cap, Cer,	100pF	±5%	50WV	

SYMBOL NO.	PART NO.	DESCRIPTION				REF
C204	L140Y203H35	"	100μF	"	"	
C205	L140Y203H29	"	56pF	±5%	"	
C206	L140Y203H29	"	56pF	"	"	
C207	U172S002H66	Cap, Poly,	0.0082μF	±5%	50WV	
C208	U172S002H66	"	0.0082μF	"	"	
C209	L172Y004H01	"	0.0075μF	"	"	
C210	L172Y004H01	"	0.0075μF	"	"	
C211, L14	L140Y203H31	Cap, Cer,	68pF	"	"	
C212	L140Y203H31	"	68pF	"	"	
C213	U182S022H36	Cap, El,	33μF	+50–10%	25V	
C214	U182S022H36	"	33μF	+50–10%	25V	
C215	U182S022H07	Cap, El,	2200μF	+50–10%	6.3V	
C216	U182S022H07	"	2200μF	+50–10%	6.3V	
C217	U182S022H37	"	47μF	+50–10%	25V	
C218	U182S022H37	"	47μF	+50–10%	25V	
C219	U182S022H03	"	220μF	+50–20%	6.3V	
C220	U182S022H03	"	220μF	+50–20%	6.3V	
C221	U182S022H34	"	10μF	+50–10%	25V	
C222	U182S022H34	"	10μF	+50–10%	25V	
C223	L172Y306H05	Cap, Poly,	0.0022μF	±5%	50WV	
C224	L172Y306H05	"	0.0022μF	"	"	
C225	L172Y306H04	"	0.0018μF	"	"	
C226	L172Y306H04	"	0.0018μF	"	"	
C227	U172S002H15	"	0.22μF	"	"	
C228	U172S002H15	"	0.22μF	"	"	
C231	U182S022H70	Cap, El,	330μF	+50–10%	50V	
C232	U182S022H70	"	330μF	+50–10%	50V	
C233	U140S020H51	Cap, Cer,	0.1μF	±20%	25V	
C270	L172Y306H16	Cap, Poly,	0.018μF	±5%	50WV	
C271	L172Y306H16	"	0.018μF	"	"	
C601	U182S022H34	Cap, El,	10μF	+50–10%	25V	
C801	L140Y306H39	Cap, Cer,	0.022μF	+80–20%	50WV	
C802	L140Y306H39	"	0.022μF	+80–20%	50WV	
C803	L140Y306H39	"	0.022μF	+80–20%	50WV	
C804	L140Y306H39	"	0.022μF	+80–20%	50WV	
C805	U182S022H31	Cap, El,	2200μF	+50–10%	16V	
C806	L182Y322H34	"	10μF	+50–10%	25V	
C807	L140Y306H39	Cap, Cer,	0.022μF	+80–20%	50WV	
C808	L140Y306H39	"	0.022μF	+80–20%	50WV	
C809	L140Y306H39	"	0.022μF	+80–20%	50WV	
C810	U182S022H50	Cap, El,	220μF	+50–10%	35V	
C811	L140Y306H39	Cap, Cer,	0.022μF	+80–20%	50WV	
C812	L140Y306H39	"	0.022μF	+80–20%	50WV	
C813	U182S022H53	Cap, El,	1000μF	+50–10%	35V	
C814	U182S022H67	"	47μF	+50–10%	50V	
C815	U182S022H37	Cap, El,	47μF	+50–10%	25V	
C816	L140Y306H39	Cap, Cer,	0.022μF	+80–20%	50WV	
C817	U182S022H37	Cap, El,	47μF	+50–10%	25V	
C820	U182S022H34	Cap, El,	10μF	+50–10%	25V	
C821	U182S022H69	"	220μF	+50–10%	50V	
C822	U182S022H67	"	47μF	+50–10%	50V	
C823	L140Y306H39	Cap, Cer,	0.022μF	+80–20%	50V	
C824	L140Y306H39	"	0.022μF	+80–20%	50V	
C825	L182Y322H34	Cap, Cer,	10μF	+50–10%	25V	
C826	U182S022H52	"	470μF	+50–10%	35V	
C301	U172S002H14	Cap, Poly,	0.15μF	±5%	50WV	
C302	U172S002H14	"	0.15μF	"	"	
C303	U172S002H13	"	0.1μF	"	"	
C304	U172S002H13	"	0.1μF	"	"	
C305	U182S033H40	Cap, El,	1μF	+75–10%	50V	
C306	U182S033H40	"	1μF	+75–10%	50V	
C307	L140Y306H08	Cap, Cer,	470] F	±10%	50WV	
C308	L140Y306H08	"	470pF	"	"	
C309	L182Y322H34	Cap, El,	10μF	+50–10%	25V	
C310	L182Y322H34	"	10μF	+50–10%	25V	

SYMBOL NO'	PART NO.	DESCRIPTION				REF
C311	L140Y306H01	Cap, Cer,	100pF	±10%	50WV	
C312	L140Y306H01	"	100pF	"	"	
C313	L182Y322H63	Cap, El,	4.7μF	+75–10%	50V	
C314	L182Y322H63	"	4.7μF	+75–10%	50V	
C315	L172Y306H26	Cap, Poly,	0.12μF	±5%	50WV	
C316	L172Y306H26	"	0.12μF	"	"	
C317	L172Y306H16	"	0.018μF	"	"	
C318	L172Y306H16	"	0.018μF	"	"	
C319	U182S022H59	Cap, El,	0.68μF	+75–10%	50V	
C320	U182S022H59	"	0.68μF	+75–10%	50V	
C321	U172S002H13	Cap, Poly,	0.1μF	±5%	50WV	
C322	U172S002H13	"	0.1μF	"	"	
C323	L140Y306H02	Cap, Cer,	120pF	±10%	50WV	
C324	U182S022H49	Cap, El,	100μF	+50–10%	35V	
C325	U182S022H49	"	100μF	+50–10%	35V	
C401	U182S033H40	Cap, El,	1μF	+75–10%	50V	
C402	U182S033H40	"	1μF	+75–10%	50V	
C403	U182S033H40	"	1μF	+75–10%	50V	
C404	U182S033H40	"	1μF	+75–10%	50V	
C405	L172Y306H01	Cap, Poly,	0.001μF	±5%	50WV	
C406	L172Y306H01	"	0.001μF	"	"	
C407	L172Y306H06	"	0.0027μF	"	"	
C408	L172Y306H06	"	0.0027μF	"	"	
C409	L172Y306H01	"	0.001μF	"	"	
C410	L172Y306H01	"	0.001μF	"	"	
C411	L140Y203H11	Cap, Cer,	10pF	±0.5	50WV	
C412	L140Y203H11	"	10pF	"	"	
C413	L182Y322H13	Cap, El,	47μF	+50–10%	10V	
C414	L182Y322H13	"	47μF	+50–10%	10V	
C415	L140Y306H03	Cap, Cer,	150pF	±10%	50WV	
C416	L140Y306H03	"	150pF	"	"	
C417	L140Y203H11	"	10pF	±0.5	"	
C418	L140Y203H11	"	10pF	"	"	
C419	L140Y203H27	"	47pF	±5%	50WV	
C420	L140Y203H27	"	47pF	"	"	
C421	U182S022H06	Cap, El,	1000μF	+50–10%	6.3V	
C422	U182S022H06	"	1000μF	+50–10%	6.3V	
C423	L140Y201H25	Cap, Cer,	0.1μF	±10%	50WV	
C424	L140Y201H25	"	0.1μF	"	"	
C425	L182Y322H23	Cap, El,	22μF	+50–10%	16V	
C426	L182Y322H23	"	22μF	+50–10%	16V	
C427	L182Y322H23	"	22μF	+50–10%	16V	
C428	L182Y322H23	"	22μF	+50–10%	16V	
C429	U172S002H13	Cap, Poly,	0.1μF	±5%	50WV	
C430	U172S002H13	"	0.1μ	"	"	
C431	L182Y322H48	Cap, El,	47μF	+50–10%	35V	
C432	L182Y322H48	"	47μF	+50–10%	35V	
C433	L140Y203H11	Cap, Cer,	10pF	±0.5	50WV	
C434	L140Y203H11	"	10pF	"	"	
C435	U172S002H13	Cap, Poly,	0.1μF	±5%	50WV	
C436	U172S002H13	"	0.1μF	"	"	
C437	U140S020H51	Cap, Cer,	0.1μF	±20%	25V	
C438	U140S020H51	"	0.1μF	"	"	
C439	U140S020H51	"	0.1μF	"	"	
C440	U140S020H51	"	0.1μF	"	"	
C501	L180Y306H01	Cap, El,	6800μF	+50–10%	50V	
C502	L180Y306H01	"	6800μF	+50–10%	50V	
C503	L140Y306H45	Cap, Cer,	0.047μF	+80–20%	50WV	
C504	L140Y306H45	"	0.047μF	+80–20%	50WV	
C505	L140Y306H45	"	0.047μF	+80–20%	50WV	
C506	L140Y306H45	"	0.047μF	+80–20%	50WV	
C507	U182S022H70	Cap, El,	330μF	+50–10%	50V	
C508	U182S022H70	"	330μF	+50–10%	50V	
C509	L182Y322H67	"	47μF	+50–10%	50V	
C510	L182Y322H67	"	47μF	+50–10%	50V	

SYMBOL NO'	PART NO.	DESCRIPTION				REF
C511	L140Y203H19	Cap, Cer,	22pF	±5%	50WV	
C512	L140Y203H19	"	22pF	"	"	
C513	L182Y322H63	Cap, El,	4.7μF	+75–10%	50V	
C514	L182Y322H63	"	4.7μF	+75–10%	50V	
C515	L182Y322H67	"	47μF	+50–10%	50V	
C516	L182Y322H67	"	47μF	+50–10%	50V	
C517	L140Y306H45	Cap, Cer,	0.047μF	+80–20%	50WV	
C518	L140Y306H45	"	0.047μF	+80–20%	50WV	
C519	L182Y322H67	Cap, El,	47μF	+50–10%	50V	
C520	U182S022H17	"	47μF	+50–10%	63V	
C521	L172Y001H01	Cap, Poly,	0.0047μF	±20%	50WV	A1, B
C521	L172Y001H01	"	0.0047μF	±20%	50WV	C, B1
C521	L172Y001H01	"	0.0047μF	±20%	50WV	C2, C1
C521	L172Y001H01	"	"	"	"	A, C3
C523	U140S020H51	Cap, Cer,	0.1μF	±20%	25V	
Q1	U260S061H03	TR, 2SC1815 (GR)				
Q2	L260D026H01	TR, 2SK192 (Y)				
Q4	U260S061H03	TR, 2SC1815 (GR)				
Q5	"	"				
Q6	"	"				
Q7	"	"				
Q8	"	"				
Q9	"	"				
Q10	"	"				
Q11	"	"				
Q12	"	"				
Q13	"	"				
Q14	L260D032H02	TR, 2SK40 (C)				
Q15	U260S061H03	TR, 2SC1815 (GR)				
Q16	"	"				
Q17	L260D020H03	TR, 2SA1015 (GR)				
Q18	"	"				
Q21	L260D025H03	TR, 2SK30ATM (Y)				
Q22	"	"				
Q23	U260S061H03	TR, 2SC1815 (GR)				
Q24	"	"				
Q25	"	"				
Q26	"	"				
Q201	L260D023H02	TR, 2SC2602 (G)				
Q202	"	"				
Q203	"	"				
Q204	"	"				
Q205	L260D027H03	TR, BC559B				
Q206	"	"				
Q207	"	"				
Q208	"	"				
Q601	U260S061H03	TR, 2SC1815 (GR)				
Q801	L260D019H02	TR, 2SA562 (Y)				
Q802	L260D020H03	TR, SSA1015 (GR)				
Q803	U260S061H03	TR, 2SC1815 (GR)				
Q804	L260D022H02	TR, 2SC1959 (Y)				
Q301	L260D020H03	TR, 2SA1015 (GR)				
Q302	U260S061H03	TR, 2SC1815 (GR)				
Q303	L260D028H01	TR, FET J111				
Q304	"	"				
Q401	L260D020H03	TR, 2SA1015 (GR)				
Q402	"	"				
Q403	U260S061H03	TR, 2SC1815 (GR)				
Q404	"	"				
Q405	L260D020H03	TR, 2SA1015 (GR)				
Q406	"	"				
Q407	L260D024H02	TR, 2SD669AC				
Q408	"	"				
Q409	"	"				

SYMBOL NO.	PART NO.	DESCRIPTION	REF
Q410	"	"	
Q411	"	"	
R412	"	"	
R413	L260D021H02	TR, 2SB649AC	
Q414	"	"	
Q415	L260D017H01	TR, 2N3055	
Q416	"	"	
Q417	L260D018H01	TR, MJ2955	
Q418	"	"	
Q501	L260D024H02	TR, 2SD669AC	
Q502	U260S061H03	TR, 2SC1815 (GR)	
Q503	L260D020H03	"	
Q504	L260D021H02	TR, 2SB649AC	
D1	U264D006H11	DIODE, 1N60	
D2	"	"	
D3	U264D037H01	DIODE, 1N4148	
D4	"	"	
D5	"	"	
D6	U264P009H11	DIODE, 10D1	
D7	U264D037H01	DIODE, 1N4148	
D8	"	"	
D9	"	"	
D10	"	"	
D11	"	"	
D12	"	"	
D13	U264D006H11	DIODE, 1N60	
D14	"	"	
D15	U264D037H01	DIODE, 1N4148	
D16	"	"	
D17	"	"	
D18	"	"	
D19	"	"	
D20	"	"	
D21	"	"	
D201	U264D037H01	DIODE1, 1N4148	
D202	"	"	
D203	"	"	
D204	"	"	
D801	U264P009H11	DIODE, 10D1	
D802	"	"	
D803	"	"	
D804	"	"	
D805	L264C003H72	DIODE, ZENER, UZ27VBM	
D401	U264D037H01	DIODE, 1N4148	
D402	"	"	
D403	"	"	
D404	"	"	
D405	"	"	
D406	"	"	
D407	"	"	
D408	"	"	
D409	L264C003H53	DIODE, ZENER, UZ-15BL	
D410	"	"	
D501	L264C003H67	DIODE, ZENER, UZ-22BH	
D502	U2645003H01	DIODE, 10EI	
D503	L264D037H01	DIODE, IN4148	
D504	L264D018H01	DIODE, PB153M	
BD501	L264D018H01	DIODE, PBL403	
BD502	L264D017H01	DIODE, PB153M	
BD801	L265D017H01	DIODE, PB153M	
LED1	L268Y027H01	LED, SE-9431D YELLOW	
LED2	L268Y025H01	LED, SE-7231 YELLOW	

SYMBOL NO.	PART NO.	DESCRIPTION	REF
LED3	L268Y024H01	LED, SE-6721 GREEN	
LED4	L268Y025H01	LED, SE-7231 YELLOW	
LED5	L268Y026H01	LED, SE-9421D GREEN	
LE06-10	L268Y028H01	LED DISPLAY	
IC1	L262C027H01	IC, TA7060AP	
IC2	L262C016H01	IC, LA1235	
IC3	L262C023H01	IC, TD6104P	
IC4	L262C019H01	IC, LB1450	
IC5	L262C017H01	IC, LA1240	
IC6	L262C018H01	IC, LA3390	
IC7	L262C022H01	IC, TC9137BP	
IC8	L262C015H01	IC, AN6554	
IC9	"	"	
IC10	L262C027H01	IC, TA7060AP	
IC301	L262C020H01	IC, NJM2043 (D)	
IC601	L262C024H01	IC, TD6301AP	
IC801	L262C025H01	IC, NJM78M05	
IC802	L262C026H01	IC, NJM78M15	
IFT 1	L364Y001H01	IFT FM	
IFT 2	L374Y002H01	IFT AM	
IFT 3	L374Y003H01	IFT AM	
L1	L361Y024H01	COIL, FM ANT	
L2	L370Y023H01	COIL, AM ANT	
L3	L361Y022H01	COIL, AM OSC	
L201	L351Y004H01	COIL, TORICL	
L202	"	"	
L301	L361Y023H01	COIL, SPRING	
L302	L361Y023H01	COIL, SPRING	
LPF 1	L351Y003H01	FILTER, LOW PASS	
LPF 2	"	"	
CF2	L365Y002H01	FILTER, CFRAMIC 10.7ML	
CF3	"	"	
CF4	L365Y001H01	FILTER, CFRAMIC AM	
BK-1	L422Y001H01	BREAKER 3.5A	
BK-2	L422Y001HQ1	BREAKER 3.5A	
CR1	L285Y001H01	CRYSTAL 7.2MHz	
VC1	U202S002H04	VC-TRIM-30N750 GREEN	
VC2	"	"	
VC3	"	"	
VCP 1	U264Y014H01	KV12362	
VCP 2	"	"	
VR1	U127S004H07	VR, SEMI B10K	
VR2	U127S004H10	VR, SEMI B50K	
VR3	U127S004H07	VR, SEMI B10K	
VR4	L127Y001H01	VR, SEMI B1K	
VR5	U127S004H11	VR, SEMI B100K	
VR6	U127S004H06	VR, SEMI B5K	
VR7	U127S004H08	VR, SEMI B20K	
VR8	U127S004H08	VR, SEMI B20K	
VR201	L121Y009H01	VR, VOLUME 20KB +50KMN	
VR301, VR302	L121Y010H01	VR 10KB X 2	
VR401	U127S001H03	VR, SMEI B1K	
VR402	U127S001H03	VR, SEMI B1K	
SW1	L432Y034H01	SW, POWER SHORTING TYPE	
SW2	L431Y012H01	SW, SLIDE MM/MC	

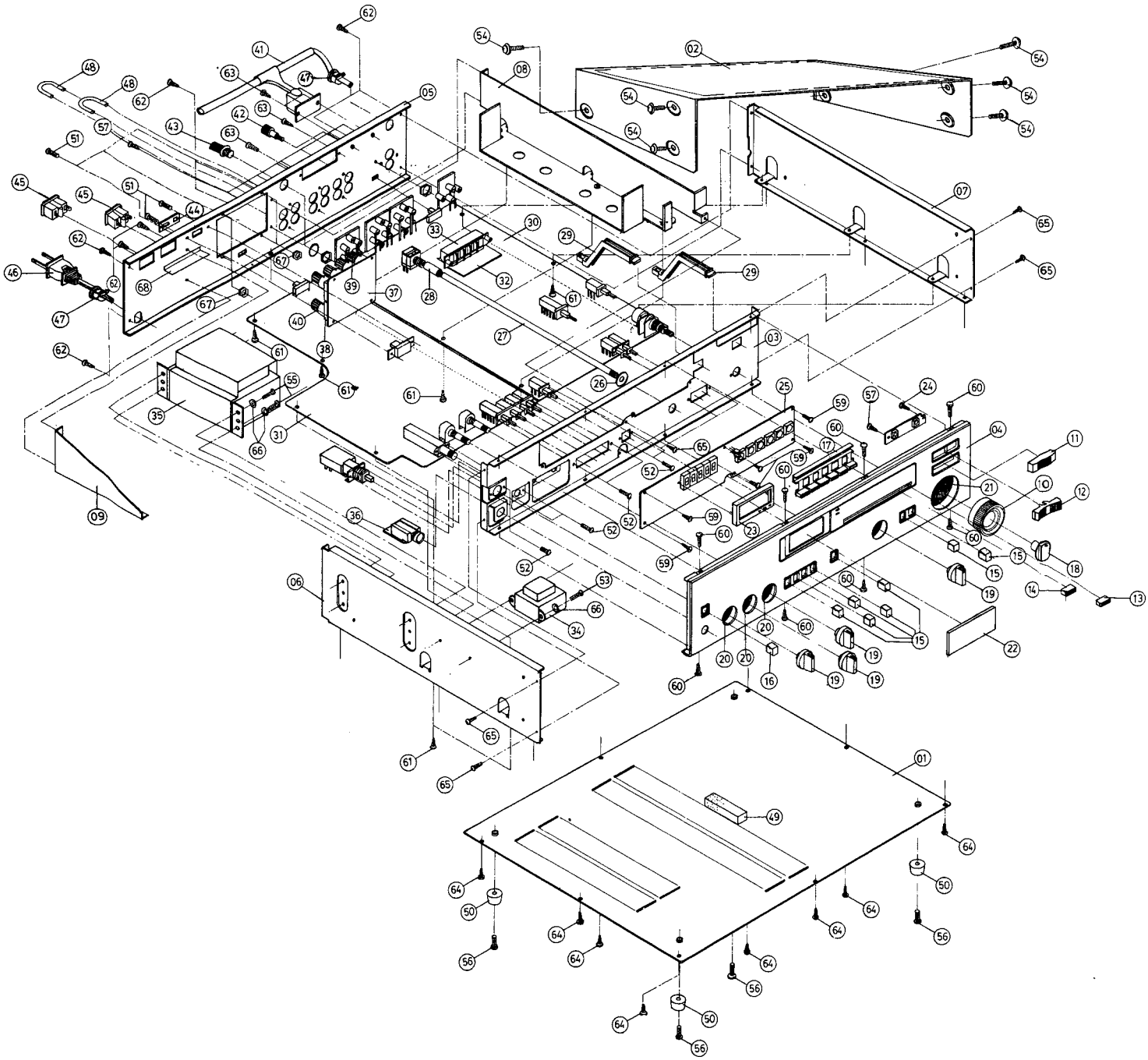
SYMBOL NO.	PART NO.	DESCRIPTION	REF
SW3	L430Y009H01	SW, SELECT INPUT	
SW4	L432Y029H01	SW, PUSH TAPE MONITOR	
SW5	L432Y031H01	SW, PUSH DYN/MONO/INF/BASS/EQ	
SW6	L432Y028H01	SW, PUSH LOUDNESS	
SW7	L432Y031H01	SW, PUSH DYN/MONO/INF/BASS/EQ	
SW8	L432Y031H01	SW, PUSH DYN/MONO/INF/BASS/EQ	
SW9	L432Y028H01	SW, PUSH LOW LEVEL	
SW10	L431Y014H01	SW, SLIDE SOFT CLIPPING SW	
SW11	L431Y013H01	SW, SLIDE IMPEDANCE	
SW12	L430Y010H01	SW, ROTARY SPK	
SW14	L432Y032H01	SW, PUSH AM/FM	
SW15	L432Y030H01	SW, PUSH SEARCH	
	L432Y033H01	SW, LIGHT TOUCH UP/DOWN/ENT	
J1	L440Y005H01	JACK RCA PHONO	
J2, J5	L440Y006H01	JACK RCA CD/AUX PRE OUT/MAN IN	
J3	L440Y006H01	JACK RCA TAPE/REC OUT	
J4	U451S015H01	JACK HEADPHONE	
TP1–TP7	U685S223H01	PIN	
	U565D381H02	RADIATOR	
J6	L440Y007H01	ANT TERMINAL	
PT2	L350Y028H01	TRANS-POWER EI-41	A1
"	L350Y035H01	" "	A
"	L350Y030H01	" "	B
"	L350Y029H01	" "	C1
"	L350Y029H01	" "	C
"	L350Y030H01	" "	B1
"	L350Y036H01	" "	C3
"	L350Y029H01	" "	C2
PT1	L350Y031H01	TRANS-POWER EI-86	A1
"	L350Y032H01	" "	A
"	L350Y033H01	" "	B
"	L350Y034H01	" "	C1
"	L350Y034H01	" "	C
"	L350Y033H01	" "	B1
"	L350Y037H01	" "	C3
"	L350Y034H01	" "	C2
F1/F2	U283S015H10	FUSE 1A	A1
"	U283S015H10	" "	A
"	U283S022H17	" "	B
"	U283S022H17	" "	C1
"	U283S022H17	" "	C
"	U283S021H17	" "	B1
"	U283S015H01	" "	C3
"	U283S022H17	" "	C2
F3/F4	U283S015H01	FUSE 4A-UL	A1
"	U283S015H16	" "	A
"	U283S022H22	" "	B
"	U283S022H22	" "	C1
"	U283S022H22	" "	C
"	U283S021H23	" "	B1
"	U283S015H16	" "	C3
"	U283S022H22	" "	C2
SW-1	L432Y034H01	POWER-SW	A1
"	L432Y035H01	"	A
"	L432Y034H01	"	B
"	L432Y034H01	"	C1
"	L432Y034H01	"	C
"	L432Y034H01	"	B1
"	L432Y034H01	"	C3
"	L432Y034H01	"	C2

SYMBOL NO.	PART NO.	DESCRIPTION	REF
SW-11	L431Y013H01	SWITCH IMPEDANCE SELECTOR	A1
"	L431Y016H01	"	A
"	L431Y013H01	"	B
"	L431Y013H01	"	C1
"	L431Y013H01	"	C
"	L431Y013H01	"	B1
"	L431Y013H01	"	C3
			C2
FE1	L929Y001H01	FRONT END	A1
"	"	"	A
"	"	"	B
"	L929Y001H01	"	C
"	"	"	B1
"	L929Y001H01	"	C3
"	L929Y002H01	"	C2
	L457D002H01	FUSE-HOLDER	A1
	"	"	A
	L457D501H01	"	B
	"	"	C1
	"	"	C
	"	"	B1
	L457D002H01	"	C3
	L457D501H01	"	C2
	L230Y002H01	CONNECTOR	B
	"	"	C1
	"	"	C
	"	"	B1
	"	"	C3
	"	"	C2

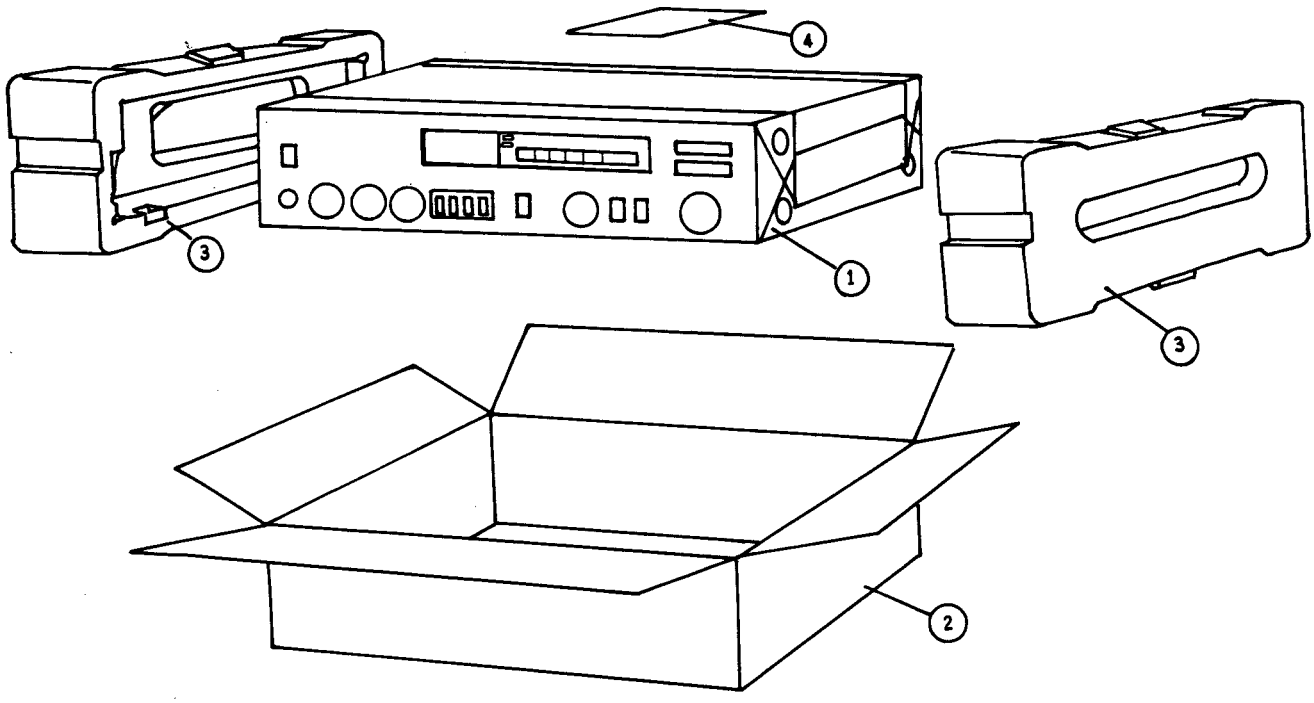
ITEM	PARTS NO.	NAME		Q'TY
01	L580A001H01	Cover Bott		1
02	L561A001H01	Cabinett		1
03	L582A001H01	Chassis, Front Sub		1
04	L702A012H01	Panel, Front		1
05	L582A002H01	PANEL, REAR	A1	1
"	L582A002H01	"	A	1
"	L582A002H03	"	B	1
"	L582A002H02	"	C1	1
"	L583A002H02	"	C	1
"	L582A002H03	"	B1	1
"	L582A002H01	"	C3	1
"	L582A002H05	"	C2	1
06	L547B005H01	Frame (L)		1
07	L547B006H01	Frame (R)		1
08	L565B002H01	Heat Sink		1
09	L541C017H01	Bracker, PCB Support		1
10	L704D062H01	Knob Volume		1
11	L704D066H01	Knob Search		1
12	L704D060H01	Knob Tuning		1
13	L704D059H01	Knob AM/FM		1
14	L704D059H02	Knob Enter		1
15	L704D061H01	Knob, Function Selector		7
16	L704D061H02	Knob Power		1
17	L704D063H01	Knob, Preset Ass'y		1
18	L704D065H01	Knob Balance		1
19	L704D064H01	Knob Rotary		4
20	L550D037H01	Ring, Felt Tonecontroll		4
21	L550D037H02	Ring, Felt Volumecontroll		1
22	L703D022H01	Display Window		1
23	L541D083H01	Display Frame		1
24	L241B034H01	PCB Ass'y Up/Down		1
25	L241D006H01	PCB Ass'y Display		1
26	L550D036H01	Bearing, Shaft		1
27	L531D017H01	Shaft, Input Selector		1
28	L562D022H01	Sieeve, Input Selector Switch 1		
29	L526C006H01	Arm, Switch/Knob Connector		2
30	L241B033H01	PCB Ass'y Tuner		1
31	L241B034H01	PCB Ass'y Amplifier		1
32	L241B034H01	PCB Ass'y Antenna terminals		1
33	L440Y007H01	Ant Terminal		1
34	L350Y029H01	Transformer, Tuner Power		1
35	L350Y033H01	Transformer, Main Power		1
36	L241B034H01	PCB Ass'y Headphone		1
37	L241B034H01	PCB Ass'y Binding Posts		1
38	L541B018H01	Binding Posts Loudspeaker		2
39	L704C013H01	Hand Post (BLK)		4
40	L704C013H02	Hand Post (RED)		4
41	L370Y023H01	AM ANT Bar		1
42	L531D018H01	Binding Post Ground		1
43	L452D001H01	CONNECTOR	A1	1
"	"	"	A	1
"	L452D002H01	"	B	1
"	"	"	C1	1
"	"	"	C	1
"	"	"	B1	1
"	L452D001H01	"	C3	1
"	L452D002H01	"	C2	1
44	L703D027H01	Plate Switch Lock		1
45	L449Y002H02	AC SOCKET	A1	2
"	"	"	A	2
"	"	"	C3	2
46	L242Y501H01	AC-CORD	A1	1
"	L242Y501H01	"	A	1
"	U2420872H06	"	B	1
"	U242C809H18	"	C1	1
"	U242C809H18	"	C	1

ITEM	PARTS NO.	NAME		Q'TY
"	L242C013H01	"	B1	1
"	L242C310H01	"	C3	1
"	U242C809H18	"	C2	1
47	L540D501H01	Clamper		2
48	L291D006H01	Bar Link		2
49	L552D013H01	Cushion Sponge		1
50	L771D006H01	Foot Rubber		4
51	U650S065H19	Screw-B M3x6		6
52	U650S063H19	Screw-B m3x6		10
53	U656S165H22	Screw-Tap 1-3x5		2
54	U651S065H30	Screw-B M4x8		6
55	U650S063H95	Screw-B M4x5		4
56	U650S063H31	Screw-B M4x10		4
57	U656S164H23	Screw-Tap 1-3x6		10
58	U656S223H20	Screw-Tap 2-3x6		1
59	U656S263H23	Screw-Tap 2-3x6		6
60	U656S164H23	Screw-Tap 1-3x6		8
61	U656S263H23	Screw-Tap 2-3x6		13
62	U656S164H23	Screw-Tap 1-3x6		8
63	U656S164H24	Screw-Tap 1-3x8		2
64	U656S263H23	Screw-Tap 2-3x6		8
65	U656S263H23	Screw-Tap 2-3x6		5
66	U680S322H03	Washer Toothed 3		6
67	U670S003H02	NUT M 3		4
68	L840D008H01	COVER-AC SOCKET	A1	1
	"	"	A	1
	"	"	C3	1
	"	"	C2	1

EXPLODED VIEW



PACKING DIAGRAM



Item	Number	NAME	Q'ty
1	L831D002H01	Bag-Poly	1
2	L800D003H01	Carton Individual	1
3	L813A006H01	Styro Packing	2
4	L871B001H54	Instruction	1

SERVICE MANUAL

7130

AM/FM RECEIVER

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